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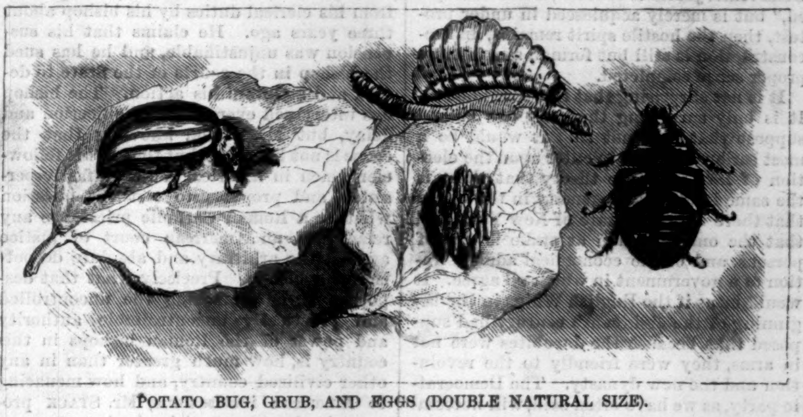
## THE POTATO PEST.

An interesting communication in regard to the "potato bug," or "Colorado beetle," has been made public by the Assistant Entomologist of the United States Department of Agriculture. This insect was discovered over fifty years ago by an explorer among the Rocky Mountains, where it lived upon the wild prickly solanum common in those regions. It was not until about thirty-five years later, when the cultivation of the potato had extended to the base of the Rocky Mountains, that it seemed to find in that a new food plant, on which it thrived. The beetle at once commenced its march Eastward, slowly but steadily, appearing in Nebraska about 1860, later in Wisconsin, Michigan, and other Western States, until in 1872 it was found in Pennsylvania, in 1873 in New York, and in 1874 in New Jersey and Delaware. With the advent of the potato beetle into the Eastern section of the country, much apprehension is felt in regard to the results of its invasion. This leaf-eating bug is about half an inch in length, is of a thick oval shape and of a yellowish cream-color, with ten dark brown or blackish lines running lengthwise down the wing-covers. The head and thorax, or middle portion of the body, are of an orange-brown color, spotted or marked with black. It has, in addition to the wing-covers, a pair of pink wings, which lie folded beneath and hidden except when the insect is in flight. The eggs are deposited in great numbers upon the young leaves of the potato, and in a few days the young larvæ appear ready to devour the foliage. In less than three weeks they acquire their full size, go into the ground, and in about ten days the perfect beetles appear. They are exceedingly prolific, and feed not only upon the potato, but the tomato and egg-plant. There are other insects similar to the genuine Colorado beetle which have existed in the East for years, and are comparatively harmless. Fortunately there are many natural checks to the ravages of this pest. The egg is destroyed by several species of "lady-bugs," the larva is preyed upon by a dozen or more varieties of bugs and beetles; in all, it is estimated that over twenty different species of insects are destructive to the "potato bug" in some stage of its existence. The most effectual artificial remedy—except hand picking, which is reliable but laborious—is Paris green. Mixed with ashes or plaster, and dusted over the vines in the morning, or applied with water, it prevents the beetles becoming very numerous. Paris green is believed to have no injurious effect upon the tubers; but as it is a violent poison, great care should be exercised in its use. Moreover, where hand picking is resorted to, there is danger from the poisonous principle of the insect itself. Farmers are advised to open warfare upon the Colorado beetles early in the season, before they appear on the field in full force.

The specimens of the Colorado beetle from which our engraving is made were sent us by the proprietors of a farm in Holmdel, Monmouth County, New Jersey.


POTATO BUG, GRUB, AND EGGS (DOUBLE NATURAL SIZE).

## THE GRASSHOPPER PLAGUE.

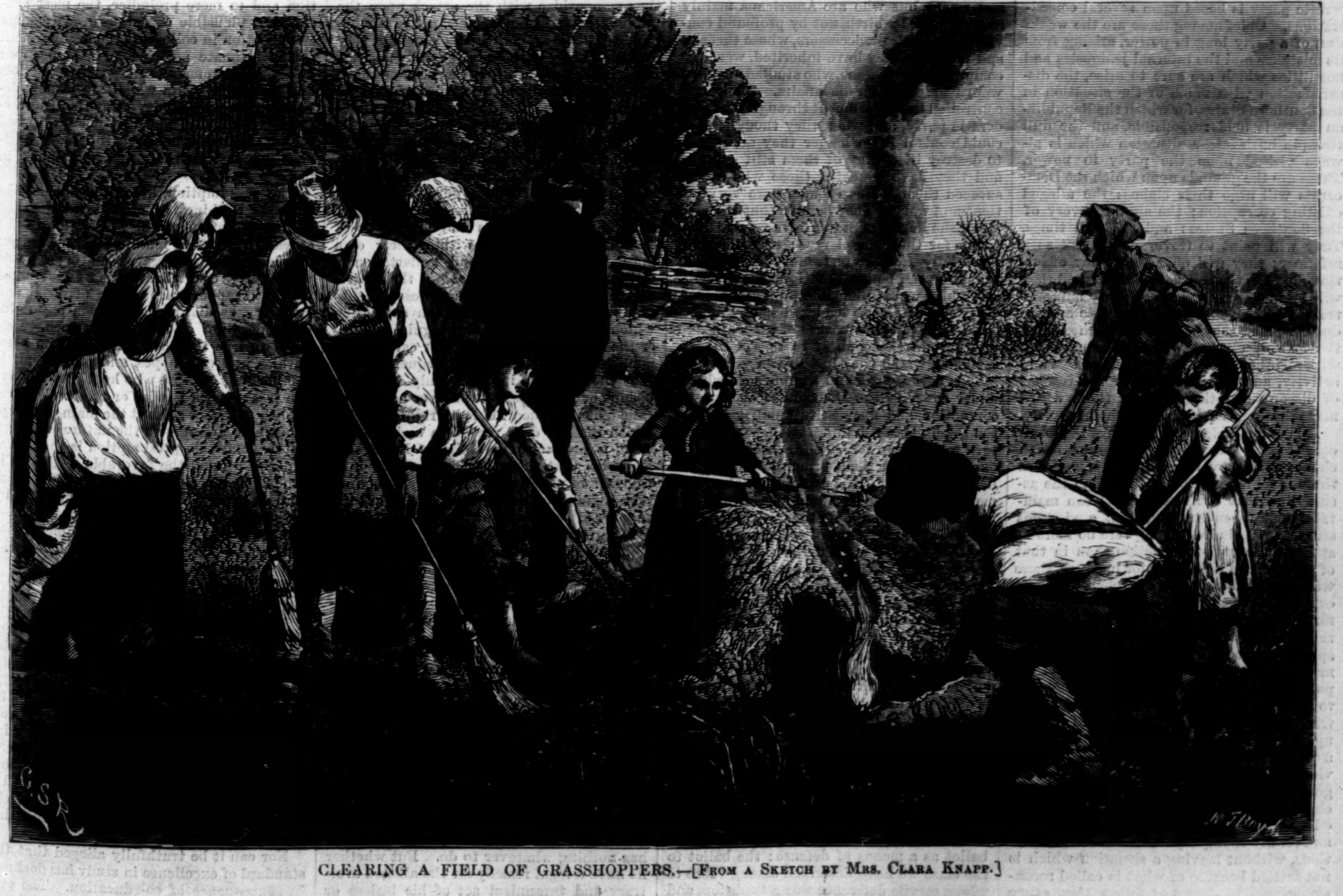
Our illustration represents a novel method of ridding a field of grasshoppers. The scene may be witnessed in many parts of Kansas, where these little pests are in a fair way of eating the inhabitants out of house and home. They are of all sizes, from the little tiny creatures hopping their first hop to larger ones of an inch or more in length, which latter are just donning their wings.

The people often turn out as represented in the picture, and after first piling some hay or straw in the centre of a field, they will commence at the outskirts, and sweep these insects toward the funeral pile prepared for them. After having thoroughly swept the land, and millions have deposited themselves on the heap, it is touched with a match, and the whole mass is burned. The farmers then plow their lands and sow their crops, in most cases with good success. Others dig trenches and sweep the grasshoppers into them, and, burying them up, often rid the country of as many as twenty bushels in a day.

If all the people of the Western States had been as persevering as a few have been in this respect, the country would probably have been rid of this plague long before now. As it is, if they remain much longer, it is to be feared the West will become desolate. The grasshoppers equal the locust plague of the Egyptians, for they threaten to "eat every herb of the land, and all the fruit of the trees: and there will not remain any green thing in the trees, or in the herbs of the field through all the land."

We find in some of our Western exchanges facetious accounts of the utilization of grasshoppers as food, in retaliation for their ravages in the fields. One of these accounts is here given, without vouching for its correctness. The *Iowa State Register* says:

> "A party of epicurean gourmands in Missouri, with recollections of the Sabbath-school lessons of their earlier days, wherein they read of the locust diet of John the Baptist, have been dishing up grasshoppers in the most seductive dishes. First, of course, came soup, which plainly showed its origin, but tasted very like chicken soup; seasoning was added, and the delicious flavor of mushroom was the result. Cakes were in the second course, and in them were thickly mixed the grasshoppers. Then came roasted hoppers plain, without grease or condiments, and the party were entranced with their exquisite crispness, and were fully of the belief that John ought to have thriven on his rude diet in the wilds of Judæa. This is the first practical effort at destroying the great pest, and already the problem is solved. The grasshopper from the fields of the husbandman in the far West will be garnered in to be shipped to the great cities of the land, and to make his appearance on the bills of fare at every first-class hotel. He will prove invaluable to the lunch-houses, and hopper soup will cheer but not inebriate the impecunious fiend of the lunch-rooms ere many moons have come. From plain grasshopper his name will be transmuted, by some wondrous power in the hands of him who deals in the literature of bills of fare, into some singularly complicated French word which shall charm the eye, as will his lusciousness delight the taste. The days of the grasshopper will grow few in the land. Having been utilized, he will immediately begin to assume the position of an object of search on the part of those who have long suffered the effects of his remorseless appetite."


CLEARING A FIELD OF GRASSHOPPERS.—[From a Sketch by Mrs. Clara Knapp.]

## YOU-MUST-NOT AND YOU-MAY.

Two butterflies, with wings of lace
Set fine with jewel spray,
Were named by sponsors of their race
"You-Must-Not" and "You-May."

Dazzling they flew; close overmet
The sportsmen madly gay,
Who chased, with swift and cunning net,
Their fascinating prey.

You-Must-Not soared and soared, joy-flushed,
The worshiped of a day;
But stealthy sportsmen caught and crushed
The beautiful You-May.

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HARPER'S WEEKLY.
Saturday, July 3, 1875.

## NEW STORY BY WILKIE COLLINS.

☞ *A new short Story of intense interest, from the pen of* Wilkie Collins, *entitled*

**"THE CLERGYMAN'S CONFESSION,"**

*will be commenced in an early Number of* Harper's Weekly.

☞ *With this Number of* Harper's Weekly *is sent out gratuitously an*

ILLUSTRATED SUPPLEMENT,

*containing the second article on* "Recent Inventions," *with a large number of engravings.*

*An illustrated* Supplement *will be issued gratuitously with the next Number of* Harper's Weekly.

## THE QUESTION OF '76.

The political situation of the country is such that the two parties will probably nominate candidates for the Presidency of unexceptionable character and unquestionable ability. This will present the simple issue of the policy of the two parties, and the actual feeling of the country as to real tendencies. The hope of success in the Democratic party is based upon several considerations. Chief among these are the weakness of a party long in power, arising from its mistakes and the internal jealousies and hostilities which are sure to arise, the dissatisfaction with much of the situation in the Southern States, for which the Republican party is held responsible, and the dull times in business—a situation which is always visited upon the party in power. These are the grounds upon which the Democrats will urge their claims: the alleged existing corruption; the slow recovery of the Southern States; and the dull times. They will point to Governor Tilden as a reformer; they will offer the policy of letting alone in the Southern States; and they will argue that a change of party administration will be sure to revive trade and industry. And they will be strengthened by the love of change, which affects politics with all other spheres of human interest and activity, and which thinks of the reasons of discontent rather than of those which make the proposed course a doubtful remedy.

It is undeniable, therefore, that the Democratic party enters upon the canvass with chances that are not despicable, and that there is no more foolish policy than the assumption that the Republicans can maintain their ascendency without a vigorous struggle. If, indeed, there were no more at stake in the national election than in that of the State of New York, for instance, there would be little cause for apprehension, however the chance might fall. But the reasons for opposing the Democratic party are national rather than local. They concern the spirit and conduct of the general government in regard to the vital question of our political situation. No man who takes time to think of the subject can suppose that the tremendous conflict of the last half century upon the question of slavery, which was not a question of labor only, but of political convictions and sympathies, of theories of the government, and of social philosophy, could end in a long and terrible war that destroyed a whole industrial system, and radically and totally changed political and social relations, without leaving a situation which is not settled because of what is called reconstruction. It does not follow that every thing is precisely as it was before, with the exception of slavery, merely because there are no armies in the field, and because the States have resumed their relations in the Union. Reconstruction is not completed, as we sometimes hear asserted, because in the nature of things it is a very gradual process. Certainly the Democratic party is not strong among the whites of the Southern States because it is the party of union, of liberty and equal rights, but because it is known to be hostile to the party that maintained the Union and proclaimed freedom and established justice. And with equal certainty the Republican party is not opposed by the same class because of its alleged corruptions, but because of what is called its unconstitutional exercise of power, the proof being its protection of the colored class. If this is so—and as a general statement it is undeniable—if the policy of reconstruction, as the most intelligent of the Southern Democratic journals concede, is not "accepted," but is merely acquiesced in under protest, then the hostile spirit remains, and reconstruction is still but formal, and is in no proper sense completed.

It is not surprising that this should be so. It is only surprising that any one should suppose that it is not so. It would be a most serious mistake to enter upon the election of 1876 with the theory that there is the same kind of homogeneity in the Union that there is in the State of New York, and that the only question at stake is one of persons, and of the economical administration of a government in which all agree. It would be as if the English Whigs in the beginning of the eighteenth century had supposed that because the Jacobites were not in arms, they were friendly to the revolution and the new dynasty. The Democratic party, as we have often said, will necessarily be controlled by its strongest element, and that element is not composed of the theorists of Northern newspapers, but of the Southern leaders, who have a great and substantial purpose to achieve. That purpose is not a renewal of the rebellion nor an attempt to dissolve the Union, but it is to perplex and defeat the policy of equal rights; to subordinate the colored citizens to the white; and, to this end, to render the amendments nugatory by obtaining control of the national government; by refusing to pass the necessary laws or to execute those which are already passed; by repealing what is called unconstitutional legislation; by changing the constitutions of the States, and making the late Slave States a political unit against the general policy known as Republican. This is the purpose of leaders who have no especial affection for the Union nor any strong faith in republican government; who are, many of them, intelligent and proud, but who are Americans mainly in name and by birth, not by profound conviction. Their predecessors, whose theories and purposes they have inherited, were accomplished politicians, who studied men and were trained in public affairs. They long controlled the government through the Democratic party, and when they thought they could control it no longer they attempted to destroy it. Many of them still survive, and they have educated those who are to succeed them. These leaders are very patient and wary. They believe that the people of the Northern States have no real sympathy for the colored race; that they are essentially traders, mercenary and timid; that they can be easily fatigued, and readily divided under plausible pretexts of conciliation; and these leaders hope by apparent deference to the wishes of their allies in this part of the country to regain the ascendency which they lost fifteen years ago.

This is the spirit and the purpose which, under cover of the Democratic charges of corruption and unconstitutionality against the Republican Administration, hopes to return to power in 1876. The contest is really one of vital American principles and of political progress. It is especially not one of men, but of tendencies and measures. The actual situation, not its theoretical aspects, demands the most careful reflection of every good citizen. We freed the slaves. They had been the victims of a system which for generations had imbruted them. They had no habits of self-help; they had no hope, no ambition, no relations to society; they were carefully held in abject dependence. Freed by a great war, they were left without property, without education, without skill, without habits of industry, without knowledge of affairs, of intercourse, of rights, and among an imperious master class, who saw in the freedom of their slaves the memorial of their own humiliation and defeat. The instant the national Government under Andrew Johnson betrayed and deserted the Republican spirit and gave sign of Democratic sympathy, the master class made serfs of the freedmen. Then we gave them the ballot as a means of defense: the ballot to the class we have described among those to whom servile deference was a tradition, and who were the most practiced and consummate politicians. Remember this situation; remember our system of government—the separate power of the States, and the dependence of the States upon the Union; remember the traditions and convictions of the late master class, and then say whether the peace, prosperity, and progress of the country will be more probably secured by intrusting the national government to the White League and the party which sympathizes with it and supports it, or to the party which has proved its fidelity to freedom, justice, and equal rights.

## "MITRED TYRANTS."

In this number of the *Weekly* we publish the first of two communications from a Roman Catholic clergyman, to which we invite the careful attention of our readers. The author, the Rev. Mr. Stack, of Williamsport, Pennsylvania, was summarily suspended from his clerical duties by his bishop about three years ago. He claims that his suspension was unjustifiable, and he has sued the bishop in the courts of the State to defend and maintain his action. The bishop has interposed every kind of objection and delay, but Mr. Stack, knowing that the cause is not his alone, but that of his fellow-clergymen in America, has steadfastly persisted, and proposes to test the question whether a Roman Catholic priest has any remedy in an American court of justice against the arbitrary and absolute despotism of a bishop. Precisely what that despotism is, how amazing the uncontrolled and practically uncontrollable authority and power of the Roman bishops in this country is, how much greater than in any other civilized country, and how menacing to American institutions, Mr. Stack proposes in these two articles to show.

His observations are those of a Roman Catholic and of a priest, and they will greatly surprise the reader, showing him how completely the priests of that communion are under the control of their bishops, so that the whole body and force of the priesthood can be concentrated and directed upon any point that the bishops may choose to attack. A priest opposes and resists at the risk of his livelihood and good name.

These letters will show the reader, also, precisely the character and enormous force of the assault which the Roman Church is making upon American institutions. Thoroughly organized, fully equipped, resolute and unflinching, the ecclesiastical purpose will be pressed inexorably by a power which will not only strike its opponents, but will not hesitate to crush all its adherents who venture to question any detail of its policy or measures. The Roman priests, whether they sympathize with the attack upon the public schools or not, are compelled to support it, and we have thus an element of very evident danger in the country, daily increasing. If the ground which has been assumed by the bishops upon the nature of the Roman establishment in this country be maintained, there is virtually no appeal upon the part of the priests against the most wanton and outrageous tyranny. It would seem, indeed, that as the Church in the eye of the law in this country is a purely voluntary association, as the State knows nothing of hierarchies and bishops and priests, or of ecclesiastical relations within their own lines, that Mr. Stack had undertaken a Quixotic enterprise, and that the courts would say to him that if he chooses to submit himself to another man in a relation which the State does not recognize, whether the man be called bishop, or cardinal, or pope, he must take the consequences, and that the law can interfere only when the bishop, or the pope, or whatever he may be called, has invaded his legal rights—rights which the law does recognize and protect. That is precisely the claim of Mr. Stack. He holds that there has been a breach of contract, of which the courts may, of course, take cognizance, and in this view he has the support of very eminent legal counsel.

If, however, he hopes for any kind of legislation, as, for instance, the formal recognition of the canon law of the Roman Church, as established in this country for its own government, rather than the missionary jurisdiction which is claimed by the bishops, he will be disappointed. Legislatures and Congress will entertain no such action, at least until the bishops obtain more power than they already have, and then the legislation would be agreeable to them. The American doctrine and practice—and it is the policy of wisdom and true principle—is the absolute independence of church and state. It is not as a bishop or as a priest that the law in this country deals with any man, but simply as a citizen; and with the internal regulation of any association of any kind, until it contravenes the law, the law has nothing whatever to do. But whether he have a legal remedy for the alleged arbitrary and tyrannical act of his bishop or not, the letters of Mr. Stack are exceedingly interesting as a revelation of the extraordinary assumptions of the Roman bishops in this country, and also of the existence of a body of priests who feel the influence of the free air which they breathe.

The conflict between Rome and modern civilization, which has long been foreseen, and of which the Vatican Decrees were the declaration of war upon the part of the Jesuitized Church, will make itself felt here. Indeed, it has already done so in the war upon the schools; and the fact that political conventions are now declaring for the integrity of the school system shows how deep and strong the feeling is, and how evident the attack. It is to be defeated in this country not by airily saying that the spirit of the age and the traditions of the American people are hostile to the arrogant assumptions of Rome. So they were hostile to human slavery, but slavery did not yield without a fierce and bloody struggle. There are many well-meaning persons who think that the best way to treat the political policy of Rome is to say nothing about it. "Don't excite hostility and hard feeling." The same well-meaning people were never weary of giving the same advice about the discussion of slavery. They think that if there is too much steam, you had better sit on the safety-valve, and if the mercury is too high in the thermometer, you had better put it in the refrigerator. The advice is amusing, but it is not worth while to follow it. The Roman policy is the overthrow of the American school system, and Americans will gain nothing by saying that San Carlo Borromeo was a good man. Their business is to see the attempt of Rome and to stop it.

## THE SAGE COLLEGE FOR WOMEN.

Among all the Commencement exercises of the year there has been and will be none more interesting than the opening of the Sage College at the Cornell University. It is the munificent gift of Mr. Sage, of Brooklyn, and is a college for women. Thus the university which bears Mr. Cornell's name fulfills one more of the designs that he had at heart; for it was always his hope that at the earliest practicable moment the doors of the great school he was founding should be opened to students of both sexes. The movement is somewhat in the nature of an experiment, and it is not to be supposed that all the trustees nor all the friends of the institution regard the new enterprise with favor. But co-education is certainly not altogether an experiment. It has been tried fully and satisfactorily in many colleges, and it is, indeed, tried constantly and successfully in the common schools and academies. Aside from the shock to tradition and to mere prejudice, the most general and plausible objection urged against co-education in colleges is the peculiar peril of the intimate association of young men and young women during the susceptible and formative years which are usually devoted to college study. But this is a theoretical objection, and can not be deemed sound, still less conclusive, if actual experience demonstrates that it is unfounded in fact.

The presumption, indeed, is against the theory. Nothing is more evident than the Divine intention of the association of the sexes. He created man in His own image; "male and female created He them." And the progress of civilization is well measured by the disappearance of the artificial and arbitrary, as distinguished from any natural, separation of men and women. Destined to live together, with common sympathies, interests, hopes, and purposes, it is the business of those who hold that Shakerism in any form is wise or "natural" to establish that fact against the plain presumption which arises from the nature of things. But beyond this presumption is the actual experiment, and the favorable testimony is ample. At Oberlin, where there are a thousand students, co-education is approved by the results of thirty years. At Antioch—and we quote from the responsible official statements—the good effect upon both the young men and women is apparent. The experience of the Indiana State University, of the Michigan University, and of Swarthmore College, near Philadelphia, is equally conclusive. If it be said that these are not the chief educational institutions of the country, it is to be answered that the perils spoken of and the alleged necessary results and influences of co-education would be precisely the same at small as at large colleges; while as to the character of the institutions, it is an interesting fact that one of the distinguished alumni of Harvard, now a professor in that college, acknowledged a few years since that the University of Michigan was more truly a university than his own *alma mater*.

Nor can it be truthfully alleged that the standard of excellence in study has declined in consequence of co-education. The evidence upon this point is most interesting. It is, then, not true that the morals or manners either of the young men or young women are injuriously affected by co-education, or that the interests of study are neglected; nor does it appear from the testimony, as, according to Dr. Clarke, it ought to appear, that the female system is unequal to the continued effort, and that health must necessarily suffer. The opposition—unless the testimony can be discredited—is mainly due to prejudice and tradition. That women should be educated at all in the higher branches of study was thought a foolish whim seventy years ago. In the golden age of Athens the high education of a woman was regarded as the sign of her disgraced character. But we have now advanced so far as to agree upon all sides that women should have every opportunity for education which they desire. That admission really concedes co-education, as the granting of the right of holding and of disposing of property absolutely really concedes the political equality of women. If a woman may properly enjoy every opportunity for the higher education, she may properly matriculate at the great universities, and for the reason that great universities can not be duplicated. The plea that there may be "university examinations" of women, as at Harvard, and at Cambridge in England, is childish; and such an arrangement as that of Girton College, near the last university—an institution in which young women are taught by the Cambridge professors—would hardly satisfy a woman who required the full resources of the university in the same way and for the same purpose that a man requires them. Women like Maria Mitchell and Mrs. Somerville, in an age when it is conceded that every facility of education should be opened to women, can not be content, nor ought they to be asked to be contented, with a supplementary college. To insist that there may be Harvards and Yales and Oxfords and Cambridges for men, and other Harvards and Oxfords for women, is a good jest, but nothing more.

There is one aspect of Mr. Sage's noble foundation which is altogether admirable. Deciding to give a great sum of money for the purpose of education, he did not make the usual and fatal mistake of seeking to make it redound solely to the glory of his own name. The money would have endowed a respectable separate college, which he might have chosen to found as his monument. But he knew that to scatter great educational forces is to weaken them; that a great university is only possible upon condition of the accumulation and concentration of resources; and therefore he did not hesitate munificently to add his gift to the renown of an institution that bears another's name. This gives brighter lustre to a wise generosity; and he will find that his deed shines the more because he was not anxious that it should shine at all.

## THE INDEPENDENT VOTER.

There is a great deal said about the independent voter, as if that phenomenon had but recently appeared, and as if those voters who support one of the two great parties were necessarily not independent. Mr. C. F. Adams, Jun., at the Schurz dinner seemed to advocate a party of voters who should support no party, as if a man's vote did not count whether he will or not. The gentlemen who have supposed for a year or two that they were peculiarly independent because they have voted sometimes for a Democrat and sometimes for a Republican have an imperfect idea of the character of party relations. Every honorable man in this country is an independent voter, that is, he never votes directly or indirectly for what he thinks to be a moral wrong or an unsound political policy. If, for instance, he believes the Republican policy and the well-known principles of that party to be essential to the advantage of the country, he will support that policy by voting for the Republican candidates, except when their character is such that he can not. But he will not, for that reason, vote for the candidate of a policy that he disapproves in any case in which his vote may help that policy. If his vote for an honest Republican as against the regular candidate should be held to be an aid to the policy he opposes, it is a result for which he is not responsible. He does what the situation allows to an honest and independent Republican voter. And the same is true of the Democrat.

Now a case that is much considered is that of a voter's proper course when he decides that the objects which he holds to be indispensable can not be attained by the party that he has generally sustained. But this situation seems to offer no perplexity. He will simply not sustain the party longer, nor will he support the other party. But he will certainly not vote for the one sometimes, and sometimes for the other. The candidates of both parties may be equally honest. But honest candidates do not necessarily stand for sound policies. This case, however, is generally theoretical. The speculations about the independent voter omit the cardinal fact that in politics, as elsewhere, a sensible man will do the best that the circumstances allow without dishonor. When a political party has become thoroughly corrupt, or its ends have been attained, or its policy has ceased to command the support of a large number, it disappears, being a wholly voluntary association. But when in a free and intelligent country there are but two great parties, which divide public sympathy, it is pretty good evidence that they represent a real issue, and that neither is so entirely corrupt as to be wholly unworthy the support of those who agree with its general policy.

## BUNKER HILL.

The great and universal interest in the Centennial year '75 culminated at Bunker Hill. Men like Samuel Adams knew that there was no further chance of reconciliation after the day at Concord and Lexington, but there were many who hoped against hope until the terrible and glorious 17th of June. The story has been graphically told in all the papers and in the ringing and stirring ballad of Dr. Holmes, which is very sure of a long tenure in the school readers and in the popular heart and memory. This universal interest is inspiring and touching, and it will be of real service to the national character. Recent events had dimmed the lustre of the older story, and there is many an intelligent American who knows more of Waterloo and the campaigns of Napoleon than of the earlier heroic days of our own history. But now almost day by day, in the enthusiasm which has seized the national heart, every famous event of the opening of the Revolution is commemorated, and with maps and pictures and fac-similes and narrations in the newspapers, all American men and women and girls and boys are studying history. This contemplation of the heroic past, this study of great deeds and of great men, will not be lost. The fires of Greek patriotism were kept burning brightly by heroic legends of Grecian heroes. The trophies of Miltiades hindered the sleep of younger warriors. The children of the desert listen with emulous and aspiring hearts to the tales of Antar. *Noblesse oblige.* The descendants of brave men must not be cowards, and the sons of fathers of a true nobility of character must themselves be noble.

The Centennial year also appeals to the national sentiment in the hearts of those in the Southern States who have cherished more pride in the State than in the nation. They will feel the force and depth of a genuine national emotion. They will see that the glory of the Revolution was a united, not a divided, glory; that it is not Massachusetts or Virginia, or New York or Carolina, but the united colonies, that waged the war, declared their independence, and made peace with England. The first and strongest instinct of Franklin, of Sam Adams, of Dabney Carr, of all the true leaders, was union, the freedom and renown of the whole, not of the individual colonies. United we stand, divided we fall. The camp around Boston a hundred years ago was a camp of several colonies. The men in the trenches on Bunker Hill were not of Massachusetts alone. Indeed, the dangers of the situation sprang from the fact that they were not wholly united, and that each colony asserted a kind of separate authority. One of the greatest of the Revolutionary lessons is the essential necessity of union, and they honor the fathers who carefully cultivate that sentiment.

## THE SCHOOLS IN ROCHESTER.

The Board of Education of Rochester, by a vote of twelve to four, have ordered the discontinuance of religious exercises in the public schools, including the reading of the Bible. The members of the board, of various theological views, cordially assented to the justice and propriety of the regulation; and the Rochester *Democrat and Chronicle* says that it has obtained the views of the leading clergymen of the city upon the subject, and that they are almost unanimously in favor of a discontinuance of the reading of the Bible as a school exercise. The ground of their opinion doubtless is that it is an exercise which destroys the interest of the pupils in the book, and dulls their reverence for it, while the English Bible itself is the form of a religious book which is not accepted by a class of the tax-payers. The object of the board is, of course, to satisfy their own sense of right and justice, and not to placate the Roman bishops, because they know that in deciding that the Bible shall not be read, they enable the Roman party to say that there is now not even a pretense that the schools are not godless. This, however, will trouble sensible men little. The schools will be godless in the sense that every kind of business and every form of human industry, and all occupation whatever, except religious worship, is godless, but in no other way.

It will be interesting to observe the next practical point of attack from the Roman party. Their strong argument, of course, is that they are taxed to support sectarian schools. This plea is now destroyed in Rochester. The assertion that the schools are godless because there is no reading of the Bible is a vague appeal to bigotry, not an argument; and it will require more than the proverbial Jesuit craft to establish that godlessness of this kind is sectarian, and that therefore Roman tax-payers are oppressed. Neither can the Roman ingenuity plead that the teaching of religion in the public schools is a tenet of the Roman faith, not only because it is not so, but because Rome denies that any faith but her own is religion. Consequently the only resource left to the enemies of the schools is to unmask and declare openly that they wish to have their share of the money to support schools in which they can teach their own creed. The Rochester *Democrat* says that that is an issue upon which Rochester is sound, and that laymen of all creeds have expressed themselves plainly in favor of the unsectarian schools. The State and the country are no less sound upon the same vital question. Republican California replies to Ohio—Jura answers to the Alps—and from the Atlantic to the Pacific the sound, conservative, patriotic common-sense of the country supports the Republican party in the demand, "Hands off the public schools!"

## PERSONAL.

President Orton, of the Western Union Telegraph Company, found awaiting him on his return from Europe a few days ago something that in the way of a surprise was not only very pleasant, but was especially acceptable as a testimonial to his official capacity and fidelity. During Mr. Orton's absence the Board of Directors of the company having ascertained that the 23d of May was his silver wedding anniversary, caused to be made and sent to his residence a superb dinner-service of silver in token of their appreciation of the industry, ability, and success that had attended his efforts as the company's chief executive officer. It was certainly as graceful as it was well deserved, and the more welcome as it was unexpected.

—Colonel Fitzgerald, the originator and proprietor of the Philadelphia *City Item*, has reason to be complacent on the success of his newspaper enterprise. In 1847 he commenced the paper as a weekly. In 1870 it was made a successful daily. In 1874 the *Sunday Item* was begun, which now has a circulation of over 50,000 copies in Pennsylvania and the neighboring States. In achieving this success Colonel Fitzgerald has had the aid of five nonpareil sons, who long ago finished their long primers, and are now among the most industrious and capable of the young newspaper men of Philadelphia.

—Count Mareforchi has emanated from the country. A much-*fêted* man was he from the day he landed on these shores with the cardinal's berretta in his trunk until his nasal promontory was again turned toward his beloved Italy. The count is a true and regular count. No sham. He is a nephew of the Prince of San Severino, who was Prime Minister to the late King Ferdinand of Naples. He has two brothers, one of whom is at present the Italian consul at Constantinople, but who will in a short time be transferred to this country.

—General William K. Fuller is the oldest living graduate of Union College. The only other living member of his class, that of 1810, is the Rev. Dr. N. T. Marcellus, of Brooklyn.

—It may be remembered that during last winter a Mr. Charles Clifton, of Jersey City, died suddenly, and that by his will, after making a few inconsiderable bequests, the residue of his estate was bequeathed to the Mechanical Arts and Engineering Department of Owens College, Manchester, England. The college authorities soon ascertained that the will would be contested on the ground of mental aberration and incapacity of the testator. They therefore promptly dispatched to this country a legal gentleman, Mr. J. E. Wilkins, of the Northern Circuit, who has been able to effect a satisfactory compromise with the contestants, by which the college has already received property valued at about $60,000, to which a further large sum will probably be added.

—The late Admiral Kelley having bequeathed $400,000 for a college for the sons of naval officers, his widow recently laid the foundation-stone of the institution at Tavistock.

—General Breckinridge's death leaves only four gentlemen living who have been elected Vice-Presidents—Johnson, Hamlin, Colfax, and Wilson. Andrew Johnson is the only ex-President now living, and he was not elected to that office by the people.

—Men of Boston and vicinity have awakened on the subject of General Richard Gridley, the chieftain who planned the fortifications and took an active part in the defense of the famous hill, once the property of the well-known Mr. Bunker. General Gridley's remains repose in an obscure place in Canton grave-yard, with no headstone. He refused a pension from the British to enter our service, being adjudged a traitor for so doing. He was a colonel then, which was some little time before the battle of Bunker Hill. He was wounded at the latter place early in the engagement, and attempted to leave the field in a sulky, but was obliged to walk by reason of the pain of his wound. No sooner had he left the sulky than it was riddled with bullets, and the horse killed.

—The Boston *Advertiser* states that the blood of Warren and Putnam is united to-day in Warren Putnam Newcomb, a boy of sixteen years of age now in the Hartford High School. The death of General Warren's wife preceded the battle of Bunker Hill, so that the slaughter of that day left his four children orphans. The two sons died unmarried; the elder daughter died childless; one son survived the second daughter. His name was Joseph Warren Newcomb, and he was therefore the sole surviving grandchild of General Warren. He lived until within a few months, and was present at the last celebration of the battle of Bunker Hill. His son married, at Hartford, Connecticut, a lineal descendant of Israel Putnam, of the same generation, and some years ago passed away, leaving the son whose name is given above. This boy is therefore the only male descendant of Joseph Warren now alive, and is also the great-great-grandson of Israel Putnam.

—The Rev. Immanuel Hulton, for sixty-two years vicar of South Wingfield, England, has just died, at the age of ninety. For seven years he kept in his house the coffin in which he was buried. It was, at his own request, made of rough wood, with handles and other iron-work rudely forged by the village blacksmith.

—Mr. Henry W. Sage, of Brooklyn, who has given to Cornell University about $300,000, proposes, it is said, to make Ithaca his permanent home.

—Mr. William Thaw, of Pittsburg, has offered to donate $100,000 to the Western University, conditioned on the institution securing an additional $100,000 in July. Mr. Thaw having thawed out so warmly, efforts are making to consummate the arrangement.

—Mr. John T. Delane, for thirty-four years past the managing editor of the London *Times*, is about to retire from that position. Mr. Disraeli has offered him a baronetcy.

—One of those things which no fellow can be expected to find out is whether Colonel Prescott or General Putnam commanded the Americans at Bunker Hill—a problem which is profoundly agitating the heart of Massachusetts, and which promises to remain a vexed question to all future time. The latest contributions to the literature of this controversy are from the pens of Mr. George E. Ellis, who has enlisted (metaphorically) under the historical gray linen sack which Prescott wore on the battle-field, and Mr. Samuel Adams Drake, who vigorously asserts the claims of "Old Put." At the risk of seeming to depreciate the importance of a question which disturbs the transcendental serenity of Boston, and which may be expected to set the outside world in an uproar of excitement, we may mention that Mr. Drake is also the author of a charming book of summer saunterings, entitled *Nooks and Corners of the New England Coast*, which will be published in a few days by Harper & Brothers. This delightful volume is illustrated with upward of three hundred engravings, embracing picturesque bits of coast and village scenery all the way from Mount Desert to Saybrook, portraits, curious fac-similes, historical relics, incidents, etc. These pictures, from the pencil of several of our best draughtsmen, serve to illustrate a very interesting narrative of the author's wanderings along the coast, in which incidents, historical reminiscences, anecdotes, and descriptions are most pleasantly mingled. It is the book of the season for summer reading.

## DOMESTIC INTELLIGENCE.

The case of William M. Tweed has at length been decided by the Court of Appeals at Albany. The judgment of the Supreme Court is reversed, and the prisoner ordered to be discharged. The judges held unanimously that under the common law it was not possible to join several misdemeanors in several counts of one indictment and impose cumulative punishment therefor. Tweed will be re-arrested on the civil suit proceedings the moment he leaves jail.

The centennial anniversary of the battle of Bunker Hill was celebrated in Boston and elsewhere June 17. There were processions, orations, dinners, bonfires, and every manifestation of rejoicing.

The Ohio Democratic State Convention was held at Columbus June 17. Governor William Allen was renominated, and Samuel F. Cary was named for Lieutenant-Governor.

A terrible explosion occurred in a fire-work factory on the marshes near Kemble and Farnham streets, Boston, June 16, by which six men were killed and others injured.

The coal-miners' strike in the Wilkesbarre region has come to an end, and work has been generally resumed. The men have suffered greatly, and it is estimated that fully $10,000,000 loss has been caused by the strike.

Governor Tilden has signed the Husted bill, providing for rapid transit in the various counties of the State, and also the bill authorizing the extension and completion of the New York Elevated Railroad.

An earthquake was felt in various parts of Ohio and Indiana June 18. In some places the shock was very severe. At De Graff, Ohio, buildings were jarred to their foundations, and at Urbana the houses swayed so that they could be seen to move.

## FOREIGN NEWS.

An important amendment to the University Education Bill was passed by the French Assembly June 16. It provides that degrees shall be awarded by a board of examiners, which shall consist half of state and half of free professors. This is regarded as a victory for the ultramontanes, as the free professors are clericals. The London *Times* regards the change as of great importance, saying, "It gives the death-blow to a system of educational despotism under which a secular and often skeptical body has hitherto shaped the higher teaching of young men who filled the professions and made the laws of the country."

The Upper House of the Prussian Diet has passed the bill withdrawing state grants from the Roman Catholic clergy.

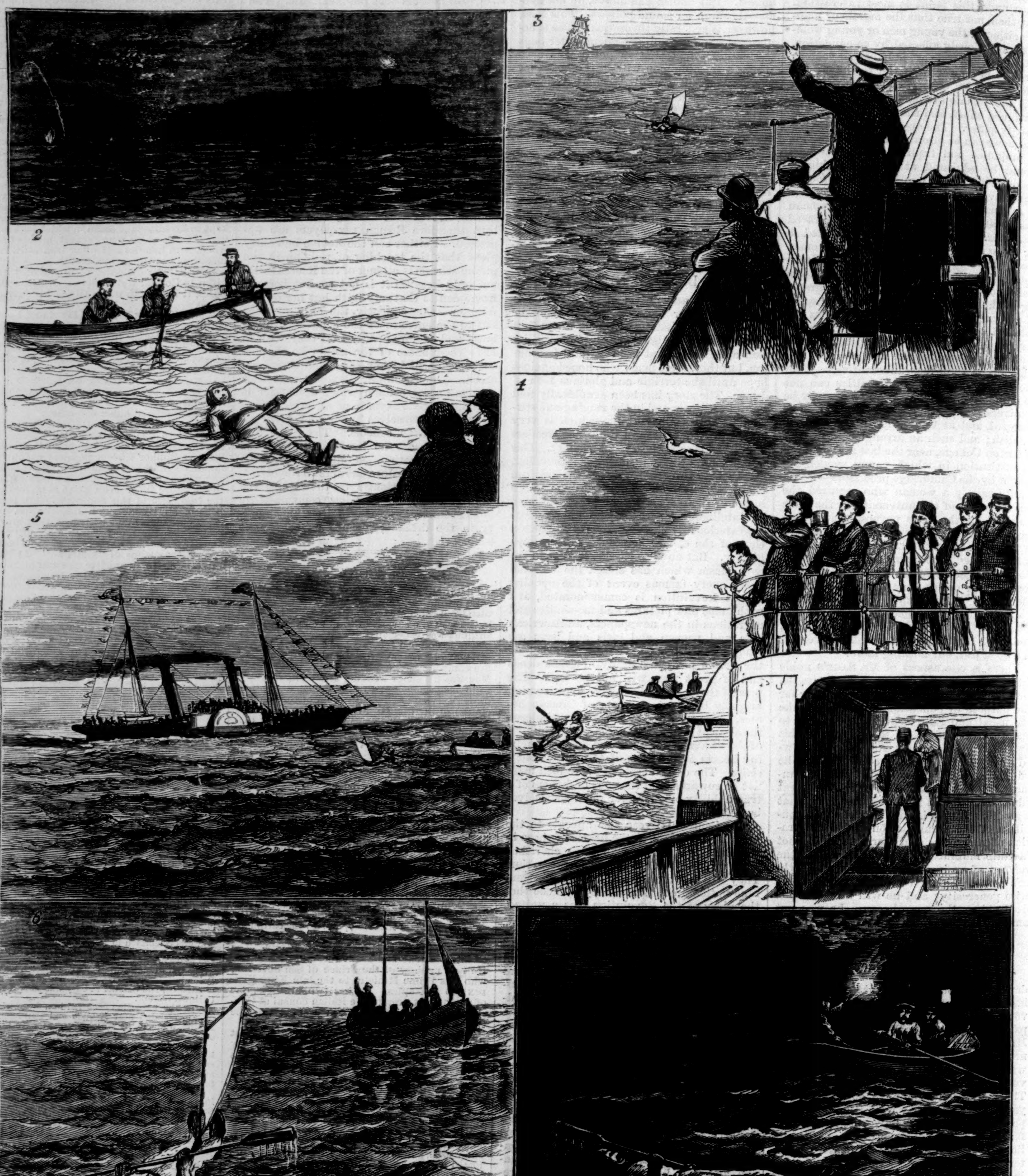
A large meeting was held in Paris, June 17, to promote the exhibition of French products at the United States Centennial Exposition. Resolutions were adopted favoring a worthy representation.

The first practice match between the American and Irish rifle teams abroad took place at Dollymount, June 17, for the Dublin Rifle Club's Long-range Challenge Cup. The best scores were as follows: Irishmen—Rigby, 135; Hamilton, 132; J. Rigby, 125; Pollak, 121; Milner, 113; Johnston, 119. Americans—Fulton, 131; Bodine, 129; Dakin, 127; Gildersleeve, 123; Coleman, 112; and Bruce, 117. The total score of the Irishmen was 745, and of the Americans 739. The match was won by Rigby.

Late advices from the Feejee Islands say that there is a slight abatement of the measles epidemic among the natives.

The Permissive Bill was rejected by the British House of Commons, June [illegible], by a vote of 371 to 86.

General Garibaldi's bill for the improvement of the Tiber passed the Italian Chamber of Deputies, June 13, with but slight amendments, by a vote of 198 to 57.



1. The start from Cape Grisnez. 2. "I'll breakfast in England yet." 3. The first sight of England. 4. Sending off the carrier-pigeons. 5. The *Victoria*, with excursionists, passing Captain Boyton. 6. The Dover life-boat with message for Captain Boyton. 7. "The beginning of the end."

CAPTAIN BOYTON'S SECOND CHANNEL TRIP.—[SKETCHES FROM THE PRESS BOAT.]

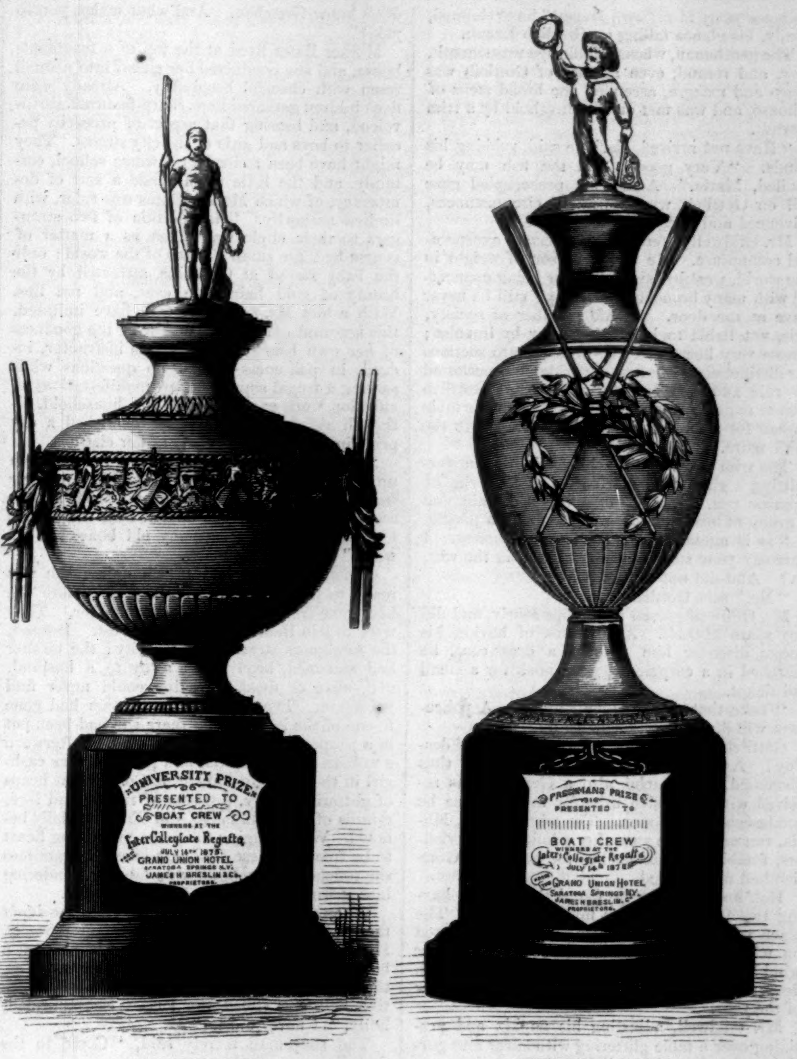
## BOYTON'S SECOND CHANNEL TRIP.

WE give on this page several pictures illustrating Captain BOYTON's second and successful attempt to cross the English Channel. It will be remembered that he came very near accomplishing this feat on the 10th of April, the thick weather, and the unwillingness of the French pilot and the members of the press to be responsible for his safety on a dark and stormy night, alone preventing him from completing his voyage from Dover to Boulogne. On Friday, May 28, Captain BOYTON had been fortunate enough to secure the cordial co-operation of Sir EDWARD WATKIN and Mr. JOHN SHAW, of the Southeastern Railway. Their steamer *Ernest*, and Captain EDWARD DANE, one of the most skillful officers in the company's service, were placed at the disposition of Captain BOYTON. Having a large company on board, including Mr. PLIMSOLL, M.P., and several representatives of the press, the *Ernest* left Folkestone for Cape Grisnez in the small hours of Friday morning; and on the way across the Channel Mr. PLIMSOLL, true to his mission as the "Sailor's Friend," exhibited two new inventions for saving life at sea—one a case of chemicals which bursts into flames and gives forth a brilliant light on being thrown into the water, and which, attached to a life-buoy, is specially designed for the rescue of "a man overboard;" the other a blazing signal for wrecks.

Captain BOYTON started at three o'clock in the morning from the Cran aux Anguilles, a surf-beaten bit of beach, 200 yards to the west of Cape Grisnez Light-house. Wading through the surf into deep water in his familiar India rubber suit, he paddled himself vigorously from the shore, his departure being signalized by a flight of rockets from the *Ernest* and from the boat of the steamer, Mr. MICHAEL BOYTON and the artists being on board the latter. The wind being unfavorable, Captain BOYTON used his paddle the greater part of the morning, and used it with good effect, too, being at six o'clock seven miles from Cape Grisnez, although only five miles from the French coast. The course decided upon for the second voyage was across the tides in as straight a line as was possible; whereas the plan of going with the tide was adopted on the first occasion. With the stout little skiff of the *Ernest* acting throughout the trip as the pilot-boat, Captain BOYTON preserved as straight a course as he could; but the tide carried him irresistibly up Channel till it turned, and swept him toward the Varne later in the day, and turned again and bore him in the evening toward the cliffs of Dover. The wind was W.N.W. at starting. As the day wore on it veered round to W.S.W. His sail was then hoisted, and helped him over the waves somewhat. Dr. **Howard**, of the New York Humane Society, was Captain **Boyton**'s medical attendant during the day. The diet provided by the doctor was of the simplest kind, the captain's three meals consisting simply of a draught of strong green and black tea, and beef sandwiches. From the drowsy state he fell into during the morning the strong tea soon roused him. His spirits were good, and his voice was wonderfully strong throughout. The quaint messages he shouted to the *Ernest* were some of them penciled on the thin strips of tissue-paper sent to Folkestone by pigeon-post. Twenty-nine carrier-pigeons in all were dispatched by Mr. M. **Boyton**, one of the last birds carrying a message informing the Queen of the good progress made by the captain up to six o'clock. Earlier in the afternoon Captain **Boyton** had been much cheered by the hearty hurrahs which greeted him from one of the Folkestone steamers, well filled with excursionists and gay with flags from stem to stern, and also from a London steamer proceeding across the Channel. Louder cheers came to inspirit him at dusk from the *Royal Wiltshire* life-boat, on board which Mr. **Marsh** gave the cue in true British style, "One, two, three—hurrah!" The *Royal Wiltshire* had been specially sent from Dover by the National Life-boat Institution to escort the gallant captain into English waters, which proved more difficult to traverse than the French waters. Eight, nine, ten o'clock passed, and Captain **Dane**'s constant reply to **Boyton**'s question of "How far from shore?" was, "Three miles." Well might Captain **Boyton** exclaim, as he did when safe aboard the *Ernest*, that they were the longest three miles *he* had ever steered!

There was an end at last to these seemingly interminable three miles. After a sensational encounter with a porpoise, which either resented his intrusion upon his domain or else wished to gambol with him as a playfellow, Captain **Boyton** finished his voyage in peace. He touched land at half past two on Saturday morning, having been in the water twenty-three hours and a half. The rocky beach whereon he landed—Fan Bay, a little to the west of the South Foreland lights—was so slippery that Captain **Boyton** had to be assisted to terra firma. Rockets from the boat and from the *Ernest*, and loud and hearty cheers, celebrated the victory of Captain **Boyton**, to whom his brother now sang out through the speaking-trumpet, "Come back now. That will do for to-night."

Captain **Boyton** was in a profuse perspiration, and his eyes were smarting from the salt-water, and his wrists were swollen. His temperature was ninety-nine degrees. Refreshed by a little milk-punch and a rest between blankets, the captain was quite himself by the time Folkestone was reached. Congratulatory telegrams poured in upon him from all parts of the kingdom—from the Queen, the Prince of Wales, the Lord Mayor, etc. Dover gave him a déjeuner. Folkestone entertained him at a banquet, given by the directors of the Southeastern Railway Company. Through all these richly earned tributes to his bravery Captain **Boyton** bore himself with characteristic modesty and manliness.



THE UNIVERSITY PRIZE.

THE FRESHMAN PRIZE.

THE BRESLIN INTER-COLLEGIATE REGATTA PRIZES.

## REGATTA PRIZES.

We give on this page engravings of two beautiful cups which will be presented to the winning crew of the University and the Freshman race at the approaching intercollegiate boat-race on Saratoga Lake. These prizes, the gift of J. H. **Breslin** & Co., proprietors of the Grand Union Hotel, at Saratoga Springs, are of very artistic design and exquisitely finished workmanship. The material of the cups is dead or satin-finish silver, resting on ebony bases. The prize intended for the University crew is thirty-six inches in height, and bears the following inscription:

University Prize.
Presented to
—— Boat Crew,
Winners at the Intercollegiate Regatta,
July 14, 1875.

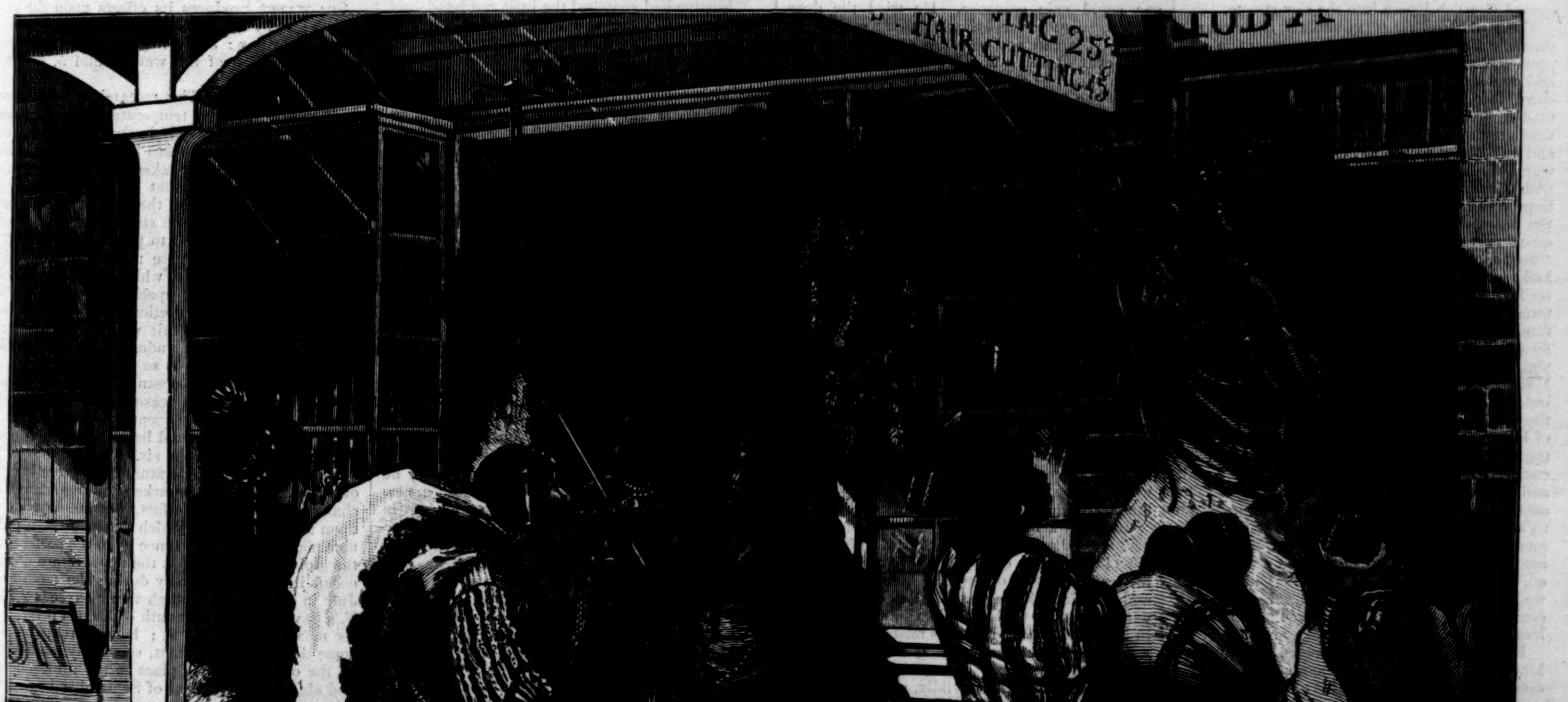
From the Grand Union Hotel,
Saratoga Springs, N. Y.
James H. Breslin & Co.,
Proprietors.

The Freshman prize is twenty-two and a half inches in height. The inscription is similar to that on the University prize, with the exception of the first line. These cups were manufactured by **Tiffany** & Co., to whom we are indebted for the photographs from which our engravings are made.

## INDIANS TRADING.

Our drawing represents a party of Indians belonging to the Ute tribe, who have come into a border town for the purpose of trading. The squaws, who do all the hard work, are loaded with the skins of various animals, while the warriors, who consider every kind of labor degrading to a man, condescend only to do the bargaining. As a rule, they also fix the price at which they are willing to part with their goods, and are not above haggling sharply with the trader, although they generally get the worst of the bargain, so far as the intrinsic value of the articles exchanged is concerned. Indian cunning, supreme in border strategy, is never a match for the sharpened craftiness of the white trader in a bargain.

The Indians depicted in our illustration, which is engraved from a sketch of an actual scene witnessed by our artists, appear to have just arrived in the town. Some of them stop to admire the ideal Indian figure before the tobacconist's shop—very unlike the real creature—others are offering their wares for sale or barter, and others are examining weapons and goods. Money is seldom desired in exchange for their wares by these wild traders. They want rifles, revolvers, knives, beads, sugar, cloth, and other articles which they can turn to immediate use. Scenes similar to the one depicted in our drawing may be witnessed in every frontier town where barbarism and civilization come in contact.



INDIANS TRADING AT A FRONTIER TOWN.

# THE ARCTIC EXPEDITION.

## FROM THE WOMEN'S SIDE.

*May* 29, 1875.

By the Author of "John Halifax, Gentleman."

O let me smile a little, I pray—
Just a little, and while I may,
Even as a child smiles: after to-day
I shall have whole years to weep in.
O let me talk like a child, unchid:
After to-day 'twill all be hid;
No hand will lift up the coffin-lid
Of the silence I shall sleep in.

In Portsmouth Harbor the good ship rides,
Rocked safely upon the placid tides,
As love in a happy heart abides,
Moving with each emotion,
With voices and hands alive all o'er:
And to-morrow—perhaps for evermore—
I shall look out from a desolate shore
Upon an empty ocean.

O love, my hero and my saint,
My knight of the white shield, without taint,
This woman-heart turns sick and faint,
Although my lips may fail not:
I see the rocks under smiling seas,
I hear a tempest in every breeze,
I feel the icebergs as they freeze
In the deeps where ship can sail not.

O love, my love, so brave, so young,
Strong arm, pure heart, and silent tongue!
O lonely years that stretch out so long!
One cry, as of lost existence,
And my soul sits down before its doom,
As a white ghost sits at the door of a tomb:
No moan, no shriek, no tears, no gloom,
Only a still persistence.

Be of good cheer. Sail on, sail on,
Unto life or death; for both are one
To the infinite faith in sweet days gone,
To the infinite love that folds thee.
These girlish arms are weak, I know,
But my heart is strong as a well-bent bow;
And whither thou goest I will go,
In my spirit that upholds thee.

Sail on, sail on, through the frozen seas,
To endless labors, and little ease:
Come back triumphant, if Heaven so please,
Or with unwon goal, inglorious;
Only come back!—No. Should God say
That He has crowned thee another way,
Love! see, beyond our night, His day,
And we are yet victorious.

# AN OLD SOLDIER.

On a December evening in the year 1870 a train, entering the dépôt with much noise and bustle, ejected Gottlieb Braun into the city streets.

There was nothing remarkable in the circumstance. He was small and insignificant in appearance, with an expression of patient suffering, and one arm gone. Such was Gottlieb Braun, one of those quiet natures capable of bravery, also capable of fighting in the last trench, as he had done in the war, which had maimed, crippled, and left him a pensioner. Had you asked him where the arm was lost, he would have replied, with military brevity, "Gettysburg." Or did you inquire as to the cause of an ugly sabre cut across the brow, and a wound in the thigh rendering quick movement painful, he would have added, "Seven Oaks" and "Shenandoah." Despair had rendered him a hero for a brief moment; he had sought death in the ranks and had not found it, but hope had died within him long before, when his little daughter Gretchen was swept away by the fever: a lonely, quiet man, of whom war had made a cruel sport, and left alive. Humble as he was, Gottlieb still cherished ambition: in summer he was a peddler back among the hills; in winter he mended shoes. The ruin of large business houses cast a shadow abroad; the ruin of Gottlieb Braun, soldier-peddler, occasioned no comment in the mercantile world, and brought grief only to his own heart. The autumn mists of mountain lakes had claimed him as a victim of ague, and while he was ill, strong men robbed him of his little stock. Surely, among the crimes of earth that cry out to heaven, this robbery must be heard! Did Gottlieb weep and repine? Not at all. He was now coming to draw his pension of one hundred dollars, and in the spring would start life again.

Here he was in the city streets, gazing about him blankly, without a friend, and, still worse dilemma, with no money in his pocket. It would make no difference to any one how he went or came, he thought: and yet at that very moment Christine Carlen, terror in her wide blue eyes, was saying to the shop-man, "I never did it!"

The chance of being left supperless and without shelter had a still worse aspect when it is remembered that it was Saturday night, with Sunday coming, and Gottlieb would not receive his pension until the following Wednesday.

Up among the mountains the Sabbath meant nature-worship to Gottlieb; skies were then brighter, and sunshine rippled the silvery waters of cascades; the breeze played among the leaves; and in all the voices of woods and air he heard only the laughter of his child Gretchen. Often at such times he took a pen and endeavored to write his thoughts of her on the day of days, when heaven kissed earth; but his great need would not flow in words on paper; he remained dumb, the purple mountains raising a prayer all about him.

In the town all was different. He paused on the curb-stone irresolutely, pierced by the miserable conviction that he was weary, hungry, and cold. A carriage drew up, and a gentleman whose bearing betrayed fussy importance alighted.

"Bless my soul! I am late, actually late for a dinner party in my own house!" he exclaimed, testily, his glance falling on Gottlieb Braun.

The gentleman, whose middle age was smooth, rosy, and rotund, even as that of Gottleib was sharp and meagre, ascended the broad steps of a house, and was met on the threshold by a trim servant.

"Have not arrived, eh?" he said, rubbing his hands. "Very good. Still the fish may be spoiled, Maria." Again his preoccupied gaze fell on Gottlieb, who, victim of circumstances, advanced and begged for assistance.

Mr. Gildwell listened with a certain exasperated composure. He was a person of weight in the world, wealthy, and noted for being connected with many branches of charity; still he never gave at the door. A safe member of society, this, not liable to be carried away by impulse; whose very heart must be divided into sections for distinct emotions; whose principles, measured by rule and compass, did not permit Gottlieb Braun to gather crumbs which fell from the table spread for a foreign attaché and Mr. Thorn the millionaire.

The trim servant still held the door open, permitting a glimpse of marble vestibule, a rim of crimson rug, the sweep of a velvet curtain, and a group of lovely children playing with a poodle.

"It is against my rules to give money. I dare say your story is true. Served in the war, eh? And did not run away?"

"No," said Gottlieb, simply.

Mr. Gildwell pursed up his lips sourly, and did not spare himself. At the risk of having his guests discover him without a dress-coat, he searched in a corpulent pocket-book for a small red ticket.

"Take that to the Poor Bureau. A policeman will direct you. Now be off."

Gottlieb turned away. Curious freak of destiny! As Gottlieb, a poor German, was thus dismissed, the attaché, also a German, was received with excessive urbanity in the house he condescended to honor. The trim servant, Maria, ran out on the step after admitting the visitors, fumbling in her pocket for pennies. Gottlieb had disappeared.

Half an hour later he found the bureau, having twice blundered and missed his way. The place was closed for the night. He wandered on without purpose to the corner. The bitter wind had lulled; the sombre clouds, gathering in denser masses overhead, promised the first snow of the year.

Mr. Gildwell, adjusting his napkin and presiding over a table glittering with silver and gorgeous with flowers and light, was observing:

"If truffles are not indigenous in the country, count, they may be cultivated."

Gottlieb observed a church, massive and dark, with a slender shaft towering far above the surrounding roofs. The church meant cool darkness, silence, purity, after the reeking streets, if one could gain entrance. He tried the door mechanically; it was locked. What would you have? We can not keep our churches always open, even should a fainting soul perish by the way.

Next he was caught in an eddy of desperate humanity—the abject poor, the sodden, brutal poor, all seeking the station-house, eager to receive that last stamp of degeneration on the coinage of their own abasement, if sleep might only bring forgetfulness of misery. Gottlieb shuddered and drew back from the crowded entrance of a building which seemed to exhale a painful familiarity with crime from every stone. He could not throw himself into that stream of pollution.

Afterward he wandered on, without purpose, past rows of fine dwellings, past hurrying people all intent on reaching home. Sometimes he held out his hand for alms, but it was done so awkwardly and hesitatingly that few noticed the movement. The way grew narrow and crooked; he had quitted the spacious thoroughfare unconsciously, and now tall houses, time-stained and dilapidated, lined the street. Gottlieb sat down on a wooden door-step to rest. Nobody disputed his right of possession. Laborers came and went; work-women trudged along; children played in the gutter.

Suddenly a light form darted around the corner, tripped, and fell almost at Gottlieb's feet. Was it the gleam of golden hair escaping from a little scarlet hood, or the blue eyes, now anxious and terrified, that made Gottlieb start with the exclamation, "Gretchen?" Color had dawned in his pale face; he knew his mistake even before the young girl rose, nursing a bruised wrist; Gretchen was in her grave. The girl regarded him sullenly, almost wildly, and when he laid a hand on her arm she darted away again as if fearing capture. Her rapid flight was impeded by an old woman carrying a basket of apples and oranges, which were spilled by the shock of contact.

"Ain't yer ashamed, now, an' for an old body too?" said the woman, whose name was Mother Bates. The girl hesitated, then stooped to gather up the fruit.

"Don't let her go," implored Gottlieb.

The girl looked from one to the other suspiciously.

"He wants me to be taken," she cried, with a sob.

"You are like my Gretchen, and I wish to help you," he returned, quietly.

Mother Bates planted her cane before her energetically.

"Where are you going?" to Gottlieb.

"I don't know," wearily.

"Where are you going?" to the girl.

"Away from the police," with a shudder and fearful glance around.

"Come along, then."

They followed the old woman, these two waifs, scarcely knowing why, and the young girl whispered to Gottlieb, "I am Christine Carlen; I don't know Gretchen. And what makes you so pale?"

Mother Bates lived at the top of a tenement-house, and she conducted her guests into a small room with cheerful hospitality. Already were five children gathered here, sharp-featured, shrill-voiced, and bearing that aspect of precocity peculiar to boys and girls of the city streets. They might have been trained in a worse school, certainly, and the little room made a sort of democracy, of which Mother Bates was ruler, with limited authority. The addition of two strangers to their circle was taken as a matter of course by these small citizens of the world; only the baby stared at Christine, attracted by the beauty of gold hair, blue eyes, and red lips. With a tact Mr. Gildwell could have imitated, this ignorant old woman, taught by the goodness of her own heart—the only true instructor, indeed, in politeness—asked no questions while serving a frugal supper. Few manifestations of affection were exchanged in the household, although shrewd Mother Bates cherished a dry pride in the success of some of her charges.

"I used to live here alone, but I picked 'em up one by one a-starving. I taught 'em their trades, too. Billy sells newspapers; Molly sweeps crossings; and Mike gits cinders from the barrels for our fire. They save my old bones lots of work."

Christine Carlen had grown quiet; she was ready to tell her story. Two years before she had come from Sweden with her mother. They were to join their family in the West. Instead, the foreigners stranded in the city; the mother had sickened, been taken away to a hospital, and, alive or dead, Christine could never find her again. They told her the mother had gone to one of the islands, and there she had been put in a pauper's grave. That was all. Afterward a woman took the child, and placed her as cash-girl in the house of Dibbler & Co. What heaps of glittering finery, festoons of ribbon and lace, crowds of beautiful ladies, did Christine daily behold! What longing filled her own young heart to be free like these fortunate ones! Sometimes she touched furtively delicate fabrics, wondering how it would seem to own such splendor.

When Gottlieb Braun emerged from the dépôt the usual throng surged through the premises of Dibbler & Co., and the shop-man had pulled a bundle of lace from Christine's pocket. Yes, there was conviction of robbery, although Christine had not stolen the lace. She affirmed, hotly, "I never did it!"

The shop-man merely said, "Come to the desk."

As she prepared to obey, trembling, confused, and astonished, the pretty girl in the corner, who wore pink bows in her hair, and who had grown deadly pale, grasped her arm.

"Get your things and run away, Christine, before the police catch you. Quick!"

Christine had snatched the little red hood, and fled in blind panic and fear, until she fell at Gottlieb's feet.

The old soldier now listened attentively to the story.

"She came to me like Gretchen," he said, with a smile Mother Bates could not understand.

In the night the snow fell. The geranium in the window, pride of all the children, shrank from the frosty pane; the meagre fire died to a single coal. The old woman had insisted upon giving Gottlieb a spare pallet in the corner; the children were huddled together on her side of the room; Christine sat before the fire regarding her bruised wrist piteously. At midnight Gottlieb rose, and silently motioned the girl to take his place. She obeyed wonderingly, and sank into dreamless sleep. In the cold dawn Mother Bates discovered that the man had fainted on the hearth.

Life may become infused with unexpected interest, which stimulates fresh exertion rather than hope. All through the night Gottlieb Braun, thinking of the lost Gretchen, gazed at the sleeping child; and when darkness screened a soft cheek, rose-flushed, swept by silky lashes, he listened to her quiet breathing, forming a new resolution, until exhaustion overpowered him in the patient vigil. The advent of Christine Carlen in his life was not such a great event, only Gottlieb's portion was such a very little one. God sent this humble man for you, Christine, slumbering among the shadows, within reach of the talons of that great bird of prey—want.

Gottlieb counted the days with haggard restlessness, a slow fever consuming his veins, pain gnawing at the very sources of life. While daylight lasted he dragged himself about the streets in search of food, at least, for Mother Bates's little brood. When he returned at night Christine was romping with the children. The old woman, whose wrinkled brown face, framed in a black hood, was a landmark on the thoroughfare where she vended fruit, recklessly dispensed apples at the evening meal, observing Gottlieb sharply the while. Little Molly, bright-eyed and saucy, with a ragged shawl pinned over her head, was making money in the slush and mire. Fear of the police kept Christine from joining her in street-sweeping. Sleep refused to visit Gottlieb's weary senses. What visions came to him in the night? On Tuesday morning Mother Bates said,

"You come to the dispensary, my man."

"What's the use? It's all the old wounds and the fever." Then he added, with sudden tears in his eyes, "God bless you, good woman, for taking us in! To-morrow I draw the pension." Thus did he identify himself already with the Swedish maiden.

Mother Bates scoffed loudly at sentiment, then paused at the foot of the staircase to wipe her own eyes on her gingham apron. Gottlieb was out all day. When he came back he gave his hostess a fifty-cent bill, with no other explanation than that he had obtained a "job" in a warehouse despite his one arm. Excitement robbed him of all appetite for food. He spent a second night with wide eyes fixed on the ceiling, counting the hours, delirium creeping over his senses. If he could only last until to-morrow! He *would* last, even if he crept to the goal on hands and knees. Desperate resolution made him face the day; desperate energy took him, pallid and trembling, to his post, and brought him back at dusk to sink down speechless on Mother Bates's pallet. The fire of life only burned in the sunken eyes. When Christine sat beside the bed, he was quiet; when she moved away, a spasm of anxiety distorted his features. Billy ran for the doctor; Molly hushed the other children; the baby hid his head in Mother Bates's lap. The doctor was out.

"So I went for *him*," said Billy, glancing curiously and half nervously at the sick man.

The noise of the street reached this quiet room only in a distant murmur. A step was heard on the stair. Mother Bates moved uneasily. Billy, failing to find one kind of doctor, had chosen another, and the difference was not clear to his own mind. Mother Bates had never received city missionaries with favor, and now one was at the door. Her creed was a crooked yet self-helpful one. "Every one must get along the best they can," she said.

He was on the threshold—a grave, slender man, with dark, calm eyes. Terrible indeed if he proved a broken reed! How did he divine the very depths of human need at a glance? With unerring tenderness he sought in Gottlieb's pocket for a package of money, guided by a look, and gave a ten-dollar bill to the old woman. Then he bent his ear to the faltering lips.

"Use the—money—to send—the child—to her friends—in the West. She knows—the—town."

Thus the old soldier made his last bequest, and so, utterly spent in the battle, died. Evening merged into night, and darkness again yielded to the morning, when Christine Carlen was led away by the missionary. Mr. Gildwell knew nothing of the event, and Mother Bates said, grimly, to the good missionary,

"If ye take the baby, Sir, we'll just stay as we are."

Gottlieb Braun, soldier, laid away in a nameless grave, had done what he could in saving the bloom of a young life.

# SEA-BATHING:

## ITS USE AND ABUSE.

By GHISLANI DURANT, M.D., Ph.D.

### II.—SEA-BATHING.

Sea-water produces its effects upon the organism: 1, by its temperature; 2, by its chemical composition; 3, by its density; 4, by the continual motion of the waves; and 5, by absorption.

1. *Temperature.*—The researches heretofore made concerning the temperature of the ocean are incomplete. We only know that on account of its density it experiences less variations than the water of rivers or lakes, and that it is in striking contrast with that of the surrounding air. Water being one of the poorest conductors of heat, when the caloric strikes the surface of the ocean, being obliged to put itself in equilibrium between liquid dense molecules always in motion, it warms slowly, while the molecules of the atmosphere being specifically lighter, the same caloric, by the reflection of its rays, warms rapidly the stratum of air which is in contact with the sea. We can understand, then, why it is that the atmosphere is so much warmer on a summer day than the ocean water, and why at night, by an analogous reason, it cools so much more rapidly, and consequently why the temperature of the ocean should be more uniform and constant than that of the air.

The changes of temperature in all large bodies of water are almost as marked and regular as the changes of seasons. In fact, they are dependent upon the same causes which produce these phenomena—the solar influence upon the surface of the globe. We find that the temperature of the ocean increases gradually during the month of July in a proportion which never exceeds 2.25° F. a day; during the month of August it reaches its maximum, 66.65° F.; here it remains for some time nearly constant, seemingly unaffected by the changes taking place in the atmosphere, and about the beginning of September begins to fall, and the decrease then goes on steadily.

Let us now study the action of this fluid upon the human organism.

The first effect produced is purely physical in its nature. It consists in a contraction of the tissues of the body and an irritation of the nervous papillæ scattered over its surface. These are due to the difference of temperature between the body and the sea-water, to the saline constituents of that fluid, and to the shock given the system by the water itself. These are the chief agencies which affect the human economy in sea-bathing. They seem to explain nearly all the phenomena, both physiological and pathological, to which sea-bathing gives rise.

The maximum temperature of sea-water, as we have seen, is about 32° F. below that of the body. The impression of cold which we experience on entering the ocean shows conclusively that this agent robs the body of a portion of its caloric. This diminution of the temperature of the body, which is especially marked upon the surface, would diminish the sensibility of the cutaneous nerves, force the blood toward the internal organs, and stop almost entirely cutaneous exhalation.

2. *Chemical Composition.*—Although the comparatively low temperature of the water is the

chief cause of the physiological phenomena manifested by the human economy, yet it is not the only one. In the saline constituents of sea-water we are to find an important agent, which, by the stimulating influence it exercises upon the cutaneous surface, not only modifies greatly the action of the cold water upon the organism, but tends in a great measure to bring on reaction, and contribute to the consecutive effects.

From the most recent observations we may assign to the water of the sea the following composition:

| | |
|---|---|
| Water | 964.70 |
| Chloride of sodium | 27.00 |
| Chloride of potassium | 00.70 |
| Chloride of magnesium | 03.60 |
| Sulphate of magnesia | 02.30 |
| Sulphate of lime | 01.40 |
| Carbonate of lime | 00.03 |
| Bromide of magnesium | 00.02 |
| Loss | 00.25 |
| Total | 1000.00 |

To the above-named salts, which represent about 3.5 per cent. of its weight, sea-water owes its peculiar taste, odor, and properties. Let us add that in it are found also some traces of iodine.

The salts of the ocean act upon the skin from the moment of immersion. This is shown by the sensations experienced by some individuals at the time of immersion, but it is best observed during reaction. It is no doubt difficult to determine exactly the part performed by the saline particles; but probably we will not be contradicted when we state that they increase the intensity and duration of the reactionary period. The sensation of heat, as evidenced by the prickling, burning, etc., of the skin, is without doubt due to them. The eruptions, the unctuous appearance, as well as the roughness, of the skin which we see in some bathers are evidently due to the same cause.

3. *Density.*—The specific gravity of sea-water is to fresh-water as 1.0289 to 1.000; hence the effect of its density in bathing is very small compared with the causes we have just given. Its method of operation is entirely mechanical. Surrounded and compressed on all sides by a liquid the density of which is greater than that of atmospheric air, the body emerges from it smaller than before, not only by the amount of contraction due to the action of the cold water upon the skin, but also by the diminution in volume due to the pressure of the surrounding water. The influence of this compression is chiefly exerted upon soft and vascular tissues, driving the fluids which they contain to the interior organs. In like manner exterior engorgements, being due especially to an accumulation of liquids, by virtue of this compressibility diminish in volume. Thus the mechanical action of the density of sea-water concurs with the physiological action of the cold in favoring the phenomena of contraction.

4. *Motion of the Waves.*—This influence also is purely mechanical. Its effects are due to friction and percussion, and vary in intensity with the amount of motion of the water, according to the shore on which the sea beats, and the state of the atmosphere.

We have all experienced the effects of moderate percussion upon the cutaneous surface in the shower-bath, which, by constantly renewing the water, must naturally aid in robbing the body of its heat, and stimulate the muscles and nerves to increased action. Similar effects are produced by the friction and percussion of the sea-water; hence they develop heat, and excite the skin to attempts at exhalation. The effect of the motion of the waves, then, is antagonistic in a measure to that of the low temperature of the water. If, however, the movements of the waves are too strong, the same effect is produced on the body as by too violent exercise, and there results a feeling of lassitude, which may be so intense as to cause general debility. If the water is very rough, the impinging of the waves upon the chest, especially if it is small, or if there is any tendency to disease, produces symptoms of pectoral trouble. This may be obviated in a measure by presenting the posterior portion of the trunk to the waves.

Thus the motion of the sea-water co-operates with its saline constituents in exciting the nervous sensibility of the skin, and when not too great, to some extent acts upon it like cold; for the vibration of the waves, renewing incessantly the water which is in contact with the body, favors as in the shower-bath the subtraction of the caloric, and tends to increase the intensity of the depressing action of the sea-bath.

5. *Absorption.*—Most German authorities regard the influence of sea-bathing as depending in a great measure upon the absorption through the skin of the water and its saline constituents.

The body of man is considered as a physical instrument having powers of action within certain limits, but until recently no notice was taken of the individual differences manifested by each person. In the same way as disease varies in its effect upon different organisms, so each individual has differences in the physiological manifestations of his health. In considering the absorption of the fluid by the cutaneous surface of the body, allowance was not made for pulmonary absorption. Another element entering into this calculation is the influence of temperature. It is important that observations should be made at different temperatures, the general results noted, and the deductions based upon these general results.

Dr. Durian took as a point of departure not the freezing-point of the F. scale, but a temperature from 90° to 93° F., which he characterized as the *indifferent* temperature. He found that if the temperature of the water was above this point, the body lost in weight, while if below, it gained. He therefore drew the following conclusions: 1. Absorption through the cutaneous surface takes place if the temperature of the bath is less than that of the cutaneous surface. 2. Absorption only takes place when this condition is fulfilled. 3. The amount absorbed is proportional to the duration of immersion. 4. If the temperature of the water is greater than that of the body, then cutaneous exhalation takes place, and there is a corresponding diminution in the weight of the body. 5. That the loss of weight bears a direct ratio to the duration of the bath and its temperature. 6. At the indifferent point (90° to 93°) there is an equilibrium between the absorption and cutaneous exhalation.

Observations by different scientists have verified the above results. Thus Semper observed that if a foot-bath was prolonged for a considerable period, there was a sensible diminution in the amount of the fluid. Collard de Martigny found that if he kept his arms immersed in vases of different capacities filled with water for an hour, the level of the liquid fell. Cruikshank, who had a patient unable to swallow, calmed his thirst by ordering him to take two baths daily. Sanctorius found that the body increased in weight in damp weather. It is useless to cite further experiments in support of absorption through the skin; yet we must not lose sight of the fact that if we have on the exterior of the body an integument which absorbs readily, we have also in its prolongation to the internal surface—that is, in the mucous membrane which lines mouth, pharynx, lungs, etc.—one much more prone to absorb water. This membrane being the chief absorbent of the body, is not the increase in weight in damp weather due to its absorption of the vapor of water inspired?

As regards sea-bathing, we admit that a certain portion of the saline constituents of the salt-water which remain upon the cutaneous surface of the body after a bath is absorbed by it; we admit also the absorption of the water itself through the integument, but only provided the bath be sufficiently prolonged; but if the immersion be but of short duration, the contraction of the cutaneous surface, which necessarily takes place, will preclude any absorption of the fluid by the skin.

[TO BE CONTINUED.]

## SCIENTIFIC INTELLIGENCE.

Circulars in reference to the twenty-fourth meeting of the American Association for the Advancement of Science have just been issued by Professor F. W. Putnam, the permanent secretary, to take place at Detroit on the 11th of August. Among the special features of this session will be the meeting of permanent subsections of chemistry and of entomology, large gatherings being expected at Detroit of persons specially interested in these subjects.

The Entomological Club is to convene Tuesday, the 10th, the day preceding the regular meeting. All members who propose to attend are requested to send their addresses to Frederick Wolfenden, secretary of the local committee at Detroit. The details in regard to facilities of transportation, etc., can be obtained by application to the local secretary.

The principal officers of this meeting are Professor J. E. Hilgard, of Washington, president; Professor H. A. Newton, of New Haven, vice-president, Section A; J. W. Dawson, of Montreal, vice-president, Section B; S. W. Johnson, of New Haven, chairman of Chemical Subsection; F. W. Putnam, of Salem, permanent secretary; W. S. Vaux, of Philadelphia, treasurer.

The death of H. H. Schwabe is announced as having taken place at Dessau April 11, in his eighty-fifth year. He was formerly quite noted for his astronomical researches, having received a gold medal from the Royal Astronomical Society in 1857.

Professor Carius died at Marburg on the 17th of April, at the age of forty-six, after a protracted illness. His scientific record is that of a chemist, his work consisting of researches upon the sulphur compounds, the oxysulphides of phosphorus, etc.

The operations in connection with the American observations of the transit of Venus in December were concluded by the return of the United States steamer *Swatara* to New York on the 31st of May, the port which she left in June last, consequently after an absence of about one year.

The vessel left Hobart-Town on the 17th of February, and reached Melbourne on the 19th. On the 1st of March the homeward voyage was entered upon. Tierra del Fuego was sighted on the 3d of April, and the equator crossed on the 6th of May, in longitude 38°. A short stop was made at Barbadoes on the 16th of May, just eleven weeks from Melbourne, for the purpose of securing a supply of water; and on the 20th the vessel left for New York, where she arrived, as stated, on the 31st.

The British corvette *Challenger*, engaged in scientific investigations in Eastern waters, arrived in Yokohama April 11, and will remain till the middle of June, when she will start on a further survey of the Pacific Ocean.

The sealing season in Newfoundland has so far not been a success, the number taken by the different vessels up to the 16th of April being less than 22,000. The *Tigress*, of *Polaris* rescue fame, had secured only 3500 at the latest advices.

Professor Cope, in a preliminary report to Lieutenant Wheeler, in charge of the United States Geographical Survey west of the 100th meridian, enumerates eighty-three species of vertebrate animals as having been discovered by him in the deposits of the eocene lake that once covered the northern and western parts of New Mexico. Of these eight are fishes, twenty-four reptiles, and fifty-one mammals. Of the whole number, fifty-four species were introduced for the first time to the notice of scientists. This fauna is nearly related to that of the eocene of Wyoming in many respects, but differs in the distribution of many of the genera. Thus *Paleosyops agenus*, abundant in Wyoming, is not found in New Mexico, while *Bathmodon*, which does not occur in the Bridger beds of Wyoming, is the most abundant type in New Mexico, parts of over one hundred and fifty individuals belonging to seven species having been found by Professor Cope. Small tapiroid animals of the genus *Orohippus* are abundant, and at least eleven species of lemurian monkeys were found. The carnivorous animals discovered number eleven species, some of which were as large as the jaguar, or larger. They are all quite distinct from living genera excepting one genus, which is related to the Asiatic civet. Some very small insectivora were also found, one of which is not larger than a small shrew. The waters of the lake abounded in turtles, crocodiles, and gar-fishes.

Mr. Robert Arthington, of Leeds, England, offers to subscribe £500 sterling toward a fund of £5000 for the purpose of securing a thorough scientific survey of Western Africa between St. Paul's River, in Liberia, and the Joliba branch of the Niger, with a view to the possible future construction of a narrow-gauge railway.

Quite recently Dr. Krause announced, to the dismay of smokers, that a large amount of carbonic oxide gas was generated in the process of smoking, and that the uncomfortable feelings experienced by beginners were due to the swallowing of a portion of that substance. Dr. Vohl, however, dissents from this conclusion, and thinks that the effects in question must be ascribed to the volatile organic bases which form while tobacco is burning.

The recent experiences of the British surveying ship the *Basilisk*, under Captain Moresby, to which we have already referred, have added greatly to our knowledge of the character of New Guinea and its inhabitants. To the three races heretofore known upon the island—namely, the Papuans on the south, the Arfaks of the mountainous country on the north, and the Malays of the northwest—Captain Moresby has added a fourth by the discovery of another, probably a mixed race of Malays and Papuans, inhabiting the whole of the eastern peninsula of New Guinea in its northern and southern shores, from about 148° longitude to East Cape, which is in 150° 58′, and the adjacent archipelago.

This race, while distinctly Malayan, differs from the pure Malay in being smaller in stature, coarser in feature, thicker-lipped, and having more frizzled hair. The race merges into pure Papuan in the neighborhood of Cape Possession. They bury their dead in the ground, and build small thatched huts over them. Their houses, like those of the Papuans, are built on piles, and communicate with the ground by means of a pole notched with steps. They cultivate the ground pretty successfully, using stone mattocks for turning up the soil. Cannibalism appears to be known among them, but prevails only to a slight degree. The men are but slightly tattooed, while the women are tattooed all over in graceful patterns. Unlike the Papuans, they possess the art of making pottery. They are better fishermen than the Papuans, having a greater variety of implements, as well as of canoes. Up to the time of the visit of the *Basilisk* they seemed to have had very little acquaintance with white men.

The annual report of the trustees of the Peabody Museum of Archæology and Ethnology, brought up to April, 1875, comes appropriately dressed in mourning, on account of the death of its first director, Professor Jeffries Wyman, whose loss American science was called upon to deplore some time in September last. After his decease the establishment was placed in charge of Professor F. W. Putnam, who has made up the present report in part from Professor Wyman's notes. It is well known that the Peabody Museum is extremely rich in objects of European prehistoric civilization. Indeed, it may almost be said that no one European museum has so large and varied a collection of specimens belonging to the Stone Age of different parts of that continent. Its additions of most note, however, during the past year consist in a number of earthenware dishes and vases, obtained near New Madrid, Missouri, and elsewhere in that State, by Professor J. C. Swallow, and purchased from him for the sum of $1500. An immense variety of curious vases, pots, and other articles was obtained, the former contracted at the top, where human and animal figures of considerable excellence of execution are represented. A very interesting portion of the report is that in which Professor Putnam details the results of his visits to sundry caves in Kentucky and Indiana, and especially his discovery, in places far removed from the entrance, of footprints of the prehistoric races made in the dust, together with sandals of grass, various articles of dress, and clothing materials.

## HOME AND FOREIGN GOSSIP.

The new uniform rates of postage between the United States and the foreign countries included in the General Postal Union, to which reference was made in a recent number of the *Weekly*, will commence July 1, 1875, and not July 11, as we were made to say by a typographical error. To all these countries the postage on prepaid letters will be five cents per half ounce. Prepayment of letters is optional; but unpaid letters will be charged in the country of destination with double the rate levied on prepaid letters; and for unpaid letters received in this country ten cents per half ounce will be charged. The prepayment of postal cards, registered articles, newspapers, and other printed papers is compulsory. Newspapers and other printed papers unpaid or insufficiently prepaid can not be forwarded. Other articles when unpaid or insufficiently paid will be charged as unpaid letters, after deducting the value of the stamped envelopes or postage stamps employed.

From the statements made by the survivors of the steamer *Vicksburg*, it appears that there was no panic or special confusion on board when the vessel was struck by the ice, nor even when the danger became known. There were seven boats—more than enough to take off all the passengers and crew. But an accident which occurred in launching the first boat, and the unexpected sinking of the steamer, resulted in an appalling loss of life.

The poplar-trees of West Virginia are something remarkable. A man who lives near Rocky Point not long ago cut a yellow poplar-tree which, when carried to the saw-mill, turned out 9500 feet of plank. The tree produced ten logs which were ten feet in length. The top log, or the log nearest the top of the tree, measured three feet in diameter in the yellow. The lumber from this one tree was sufficient to erect a comfortable and good-sized dwelling-house, for which purpose it was used. It is said there are large numbers of trees of the same kind on the same lands, but many of them are larger than the one mentioned, and consequently troublesome to haul.

Last year the "Summer Home" for poor children was situated in a delightful spot on Staten Island, but it lacked bathing facilities. For the present summer the Home is to be located at Bath, Long Island, close by the beach. The children will be constantly under the surveillance of suitable persons.

The Long Branch *Surf* is the name of a printed sheet which promises to give the fashionable news and gossip of that popular watering-place.

A tunnel through Mont Blanc has been proposed by an Alsacian engineer, who thinks it will not be more difficult than the Mont Cenis Tunnel.

Numerous letters continue to reach us from persons who have been much interested in reading the "Higher Life of Animals." One gentleman, of Denver, Colorado, writes as follows:

"The remarkable actions of a young duck and pullet, of which I was an eye-witness, induce me to give you an account of them.

"Last summer there wandered into my back-yard a pullet about three months old, accompanied by a duck of about the same age. My attention was drawn to them by the unusual actions of both, and upon investigation I found that the duck had by some means lost about three-quarters of an inch or more of the upper portion of its bill. Wondering how it could pick up food with its bill in this condition, I threw down a handful of corn. The duck did not see it, being some distance away, but the pullet immediately ran to it, and taking up a grain in its bill, set up a loud 'clucking,' as the mother hen does when calling her chicks to her. Upon this the duck ran to the pullet, who, holding her head well up, dropped the grain of corn, which was caught by the duck before it reached the ground. The pullet continued to 'call,' while it picked up the grains and dropped them for the duck to catch, which it did twice out of three times at least. I think it remarkable, because it seems impossible that the pullet could have been *taught* to thus provide for the maimed duck."

Only two free public baths for this great city! Well, two are better than none. But if the estimate made, that nearly 13,000 persons daily go to each of these baths, is correct, some notion of their popularity may be obtained, and the desirability of greater facilities is apparent. None are admitted to these baths without tickets; but so great is the crowd that many, especially those who are feeble and infirm, are never able to get inside the bath-house. They are obliged to give way to those who are more able to force an entrance. One bath is at the foot of Fifth Street, on the East River, the other on the North River at Tenth Street. There should be at least a dozen public baths in the metropolis of America.

The corner-stone of the new Art Building of Mount Holyoke Seminary was laid on June 1.

About two miles from Poughkeepsie a terrible accident recently occurred. The coachman of Mr. John F. Winslow was boiling a mixture for harness blacking, when, on adding some turpentine to it, suddenly it ignited. In endeavoring to lift the kettle from the stove the burning liquid spattered on his clothing and set it on fire. His little daughter attempted to assist him, but her clothing was soon in flames. Her mother, hearing her cries, rushed to her rescue, and at length succeeded in extinguishing the blaze, but not until the child was fatally burned. The coachman was running wildly about, all in a blaze, when Mr. Winslow reached the place, and called to him to throw himself on the ground and roll the fire out. He did so with success, but not until he was terribly burned.

The influx of visitors to Newport does not come until July; consequently, although Newport does not abound in hotels, there is plenty of room for all June guests. In fact, one visitor who ventured early in June to investigate the beauties of the beach was almost frightened to find himself entirely alone, with a mile or so of wooden seats all to himself. July will change the aspect of that same beach.

During the first six weeks after the incorporation of the Society for the Prevention of Cruelty to Children fifty complaints were made of ill treatment of children, and the cases all investigated by the society. Through the exertions of this society many children who have been compelled to beg in the streets or to perform labor unequal to their strength have been relieved and placed in school.

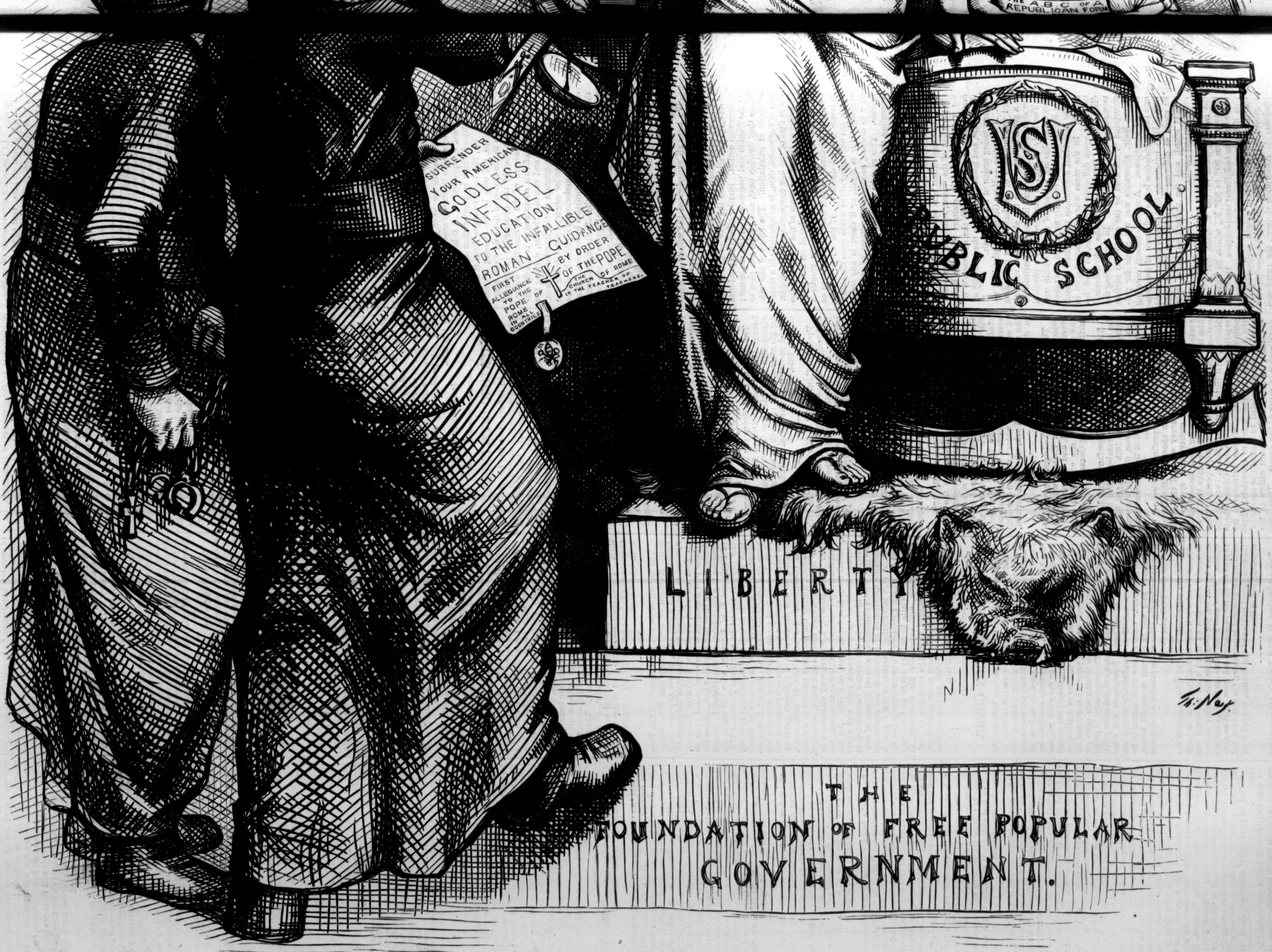
It is stated that the Coliseum erected a few years ago at the corner of Sixth Avenue and Broadway has been purchased by a gentleman of Philadelphia, who intends to remove the building and re-erect it in the Park of that city. It is estimated that it can be removed for about $10,000.

Many curious stories are told of Léo Lespès, better known as "Timothée Trimm," a journalist of great sprightliness and versatility, who recently died in Paris. He was a recklessly generous spendthrift, and even when money came prosperously into his pocket he often found himself in straits, from which he sought to emerge by devices which won him the reputation of a practical joker of rare order. One day Lespès, being at work, was disagreeably intruded on by a creditor, who announced his intention of not departing till he was paid. Parley proved useless; the creditor planted himself on a chair, and Lespès beheld him with consternation draw bread and cheese from his pockets as though to fortify himself against events. Several hours glided by; Lespès had resumed his writing, and finished an article. The creditor showed no signs of moving, and, from the glances which he cast at a sofa, was evidently speculating what kind of bed it would make. Suddenly Lespès rose, and with bits of newspaper began carefully blocking all the apertures through which air could come into the room. He then made preparations for lighting a charcoal fire; but before applying the match, pasted on the wall, just opposite the creditor's eyes, a paper thus laconically worded: "Take notice that we died of our own will."

"What are you doing?" exclaimed the creditor, uneasily.

"Your society would render life intolerable, so we are going to commit suicide together," answered Timothée, tranquilly.

Needless to say that the creditor decamped.

THE A.B.C. OF A REPUBLICAN FORM
SURRENDER YOUR AMERICAN GODLESS INFIDEL EDUCATION TO THE INFALLIBLE ROMAN GUIDANCE
BY ORDER OF THE POPE
FIRST ALLEGIANCE TO THE POPE OF ROME IN ALL COUNTRIES
THE CHURCH OF ROME IS THE TEACHER OF TEACHERS.
US
UBLIC SCHOOL
LIBERTY
THE FOUNDATION OF FREE POPULAR GOVERNMENT.
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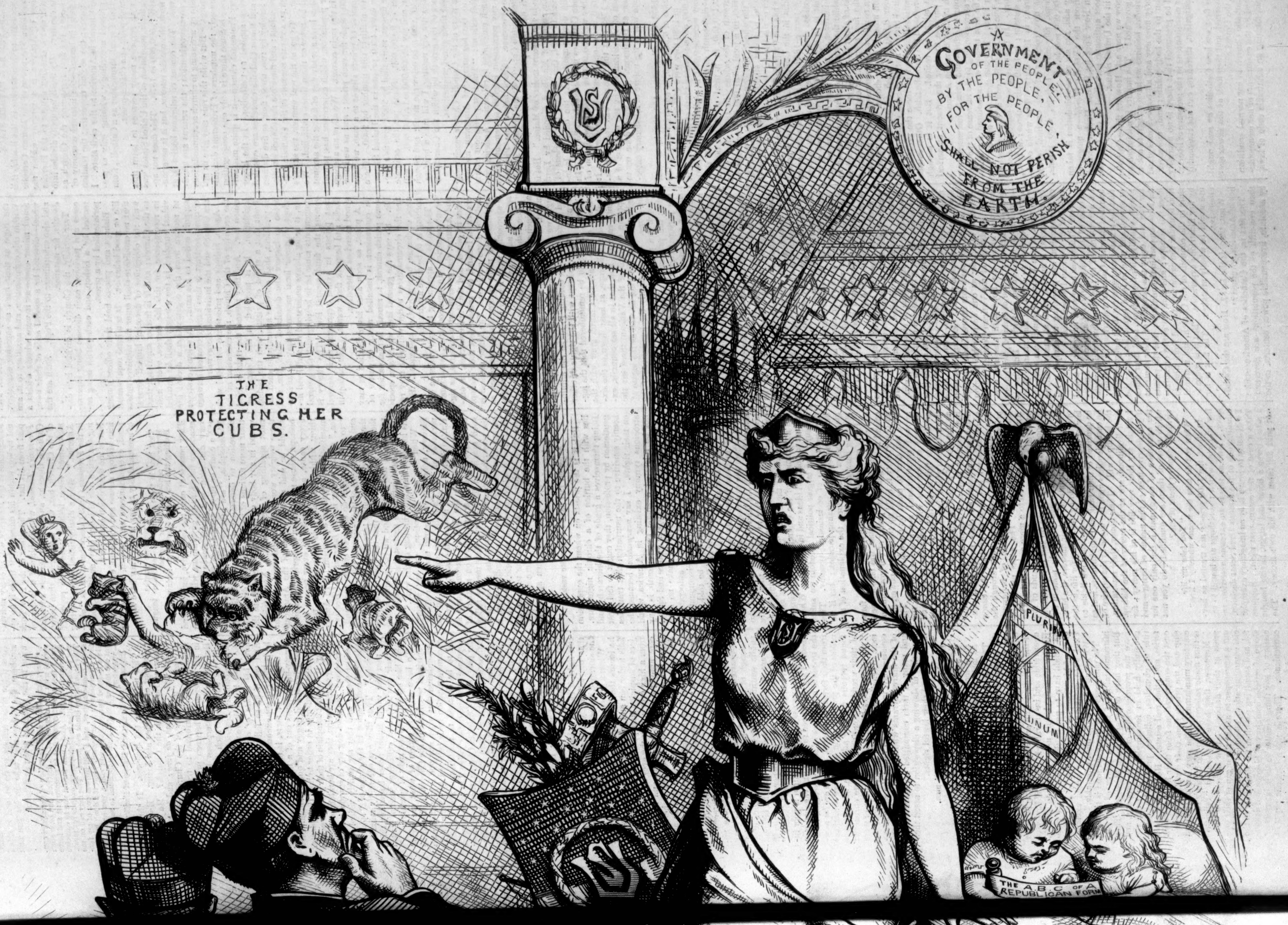
THE TIGRESS PROTECTING HER CUBS.
GOVERNMENT OF THE PEOPLE, BY THE PEOPLE, FOR THE PEOPLE, SHALL NOT PERISH FROM THE EARTH.
US
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THE A.B.C. OF A REPUBLICAN FORM

# MITRED TYRANTS.

### FROM A ROMAN CATHOLIC POINT OF VIEW.

### BY THE REV. FATHER STACK.

I PROPOSE to demonstrate in the *Weekly* this proposition: The power of the Roman Catholic bishops of America is a tyranny within the Church, and a standing danger to the liberties of the country. My thesis naturally divides into two parts: the first respecting the Church as considered in herself—the internal economy of the Church; the second respecting the relation of the Church in America to the civil state. I will proceed accordingly, wishing only to premise that I speak throughout as a Catholic, from the stand-point of a citizen-priest.

It may surprise many persons to learn that the Catholic population of the United States was probably 8,500,000 in 1870. This does not appear from the census returns, but it is nevertheless true. The census of religious bodies is, at most, an approximation; the returns are usually made up according to church accommodations or sittings. But while this rule may give us approximately the numbers of Protestant denominations—because there is only one congregation to every Protestant church—it is quite misleading when applied to Catholics. In the larger cities and towns Catholic churches are crowded every Sunday by two, three, four, or five distinct congregations; and therefore the church sittings furnish no accurate account of the Catholic population. To get at the real number, the sittings should be twice or three times multiplied. We Catholics have a ready way of fixing the amount of our population, which experience has proved to be in the main correct. We allow an average of 2000 people for each priest; and as we know the number of priests almost to a man, we have only to multiply this number by 2000. There are, at least, 4500 priests in the United States. These figures, multiplied by 2000, give us a population of 9,000,000. Some put the estimate higher, and say 10,000,000 to 12,000,000. I will say 8,500,000 to be below the mark; and though statistics are dry reading, I will take a brief retrospect of the growth by which the Church has attained these grand proportions.

The roots of the Catholic Church reach away back to the beginnings of American history. Bancroft tells us: "The first permanent efforts of French enterprise in colonizing America preceded any permanent English settlement north of the Potomac. Years before the Pilgrims anchored within Cape Cod, the Roman Catholic Church had been planted by missionaries from France in the eastern moiety of Maine." But it was the colony of Maryland, founded by Lord Baltimore in 1634, that became the nucleus of Catholic development. At the date of Independence Catholics numbered about 25,000. In 1789 they were 30,000, in a total population of 3,000,000, or one-one-hundredth of the whole. It was in 1789 that the Church was regularly established on American soil by the erection of a bishopric at Baltimore. The work done up to that time was in the nature of missionary enterprise.

In 1808 Catholics were 100,000, in a total population of 6,500,000, or one-sixty-fifth of the whole; in 1830 they were 450,000, in a total of 13,000,000, or one-twenty-ninth of the whole; in 1840 they were 960,000, in a total of 17,070,000, or one-eighteenth of the whole; in 1850 they were 2,150,000, in a total of 23,191,000, or one-eleventh of the whole; in 1860 they were 4,400,000, in a total of 31,000,000, or one-seventh of the whole; in 1870 they were 8,500,000, in a total of about 40,000,000, or more than one-fifth of the whole.

Thus has the Catholic Church grown by colossal strides in the United States. For a period of forty years—1830 to 1870—Catholics more than doubled their number from census to census; that is to say, the Church received a decennial increase of more than one hundred per cent., while the general population increased in the ratio of about thirty-five per cent. Wonderful as the fact seems, it is easily accounted for when we recollect the swarms of people that immigration brought to our shores. From 1830 to 1870 over 2,000,000 Irish emigrants came to the United States, not to mention German and other nationalities, and of these the great majority professed the Catholic faith. Other causes likewise might be recited. But it is enough for my purpose to show the present numerical strength of the Church in America.

Of course bishops and priests increased in a manner corresponding to the increase of the people. The first bishop was appointed for Baltimore in 1789. In 1808 there was one at New Orleans, one at Louisville, one at Boston, one at New York. In 1830 there were eleven bishops; in 1840, sixteen; in 1850, thirty-three; in 1860, forty-three; in 1870, sixty. The whole establishment now consists of one cardinal, seven archbishops, fifty-seven bishops, 4500 priests, and 8,500,000 people.

I may add, the above recapitulation is taken chiefly from the *Catholic World*—a magazine edited in New York by Father Hecker—which is the most authentic periodical of the Catholic Church in the United States.

And now we may ask, How are those Catholic millions governed? The inquiry is not improper or impertinent, because we have a right to ask in this country how any and all corporations stand in relation to the body-politic; and, moreover, it should be presumed that there is no necessity for secret machinations in the presence of liberty. Our investigation, therefore, can not reasonably offend.

Let us first see how Catholics *as such* ought to be governed, and then look at the *modus operandi* in the United States.

The Catholic Church in her normal condition is regulated by the enactments of her œcumenical councils, forming an admirable code of laws, known as the canon laws, which are administered by officials known as the hierarchy. The hierarchy is composed of bishops and priests, with the Pope at their head as supreme executive. Within this organization, and auxiliary to it, are found minor ones—as it were wheels within a wheel—directed by a special code of their own, and also subordinate to the Pope. Such are the Jesuits, for instance.

Territorially, the Church is divided into dioceses and parishes, each diocese being superintended by a bishop, and each parish being superintended by a priest.

Bishops and priests hold their offices during life or good behavior. It is a legal requirement that no candidate shall enter the ministry unless with the obligation of devoting himself forever to the Church; and it is further stipulated that, in recompense for this life service, every individual enrolled in the ministry shall be entitled to receive from the organization a decent life support suited to his rank. A solemn contract or quasi-contract is thus legally created between the Church and the individual clergyman.

Again, bishops and priests are intrusted with the ordering of the Church, the execution of the canon law. And they possess the right of local legislation. It is provided in the Council of Trent that a synod of priests, with the bishop as president, shall convene annually in each diocese to inspect the details of discipline, and adopt whatever local measures may be advisable, it being always understood that all local arrangements must be in keeping with the general canons, the fundamental law. The theory is that priests in synod represent their several flocks and bespeak their wants. The bishop in synod exercises a negative.

A priest, as soon after his ordination as may be convenient, is installed rector or pastor of some parish church, to remain in that parish for life. So says the general law, which also specifies the circumstances under which he may resign, exchange, be removed, or suspended. But nothing is to be done arbitrarily.

The mode of appointing bishops varies in different countries. In some countries, as in France and Austria, the government nominates, or signifies its *placet*, and the Pope confirms; in others, as in Ireland, the priests elect their bishop, and the Pope confirms. The latter method is doubtless the more commendable, inasmuch as it approaches more nearly to our sense of representative authority.

The bishop is the executive of a diocese, and a principal agent of the Church. His power might, therefore, become dangerous, and accordingly we find his office circumscribed by wise and equitable laws tending to make the administration of it consistent with the rights of other classes. It should be remembered that the legislation of the Catholic Church grew with the civilization of Europe, at least down to the sixteenth century, and that in all her councils, except the Council of the Vatican, there sat the embassador of the king as well as the legate of the Pope. Consequently the legislation of the Church ran parallel to that of civil society, and when the protection of law was thrown around the personal rights of members of the state, a similar protection was extended to the personal rights of members of the Church. As far back as 1215—the epoch of the *Magna Charta*—we find Pope Innocent III. proclaiming in the Œcumenical Council of Lateran a decree which ordains that no subject of the Church shall be degraded or punished without process of judicial trial, wherein the accused may have full opportunity to defend himself, being apprised of the charges against him, and meeting his accusers face to face. This was the common law of the Church before the time of Innocent. He grounded his decree expressly on the Holy Scripture, the source of all just laws in Christian civilization. Since his time that decree has been embodied with the positive or canon laws of the Church. It was renewed and re-enforced by the Council of Trent, and has remained in the books unaltered to this day.

Such is an imperfect and brief sketch of the standard form of Catholic government. The Church resembles a limited monarchy more closely than any other type of civil government, and comprises, to a respectable degree, the idea of election and representation. I am aware it is the Protestant impression that Catholicism signifies arbitrary one-man power, from the Pope down to the humblest priest. Enough has been said, I trust, to prove this impression erroneous—except in so far as one derives his opinion from the doings of the Vatican Council, which saw fit to invest the Pope with absolute, irresponsible authority in the domain of government as well as in the domain of faith. But this is not the occasion to dwell on that strange fact. The work of the Vatican Council can scarcely be considered a finality when so many nations of Christendom are preparing to compel a reversal of the Vatican Decrees.

From all that has been said, however, it would be inferred that the 8,000,000 Catholics of America are controlled by the same laws which regulate the Church in Catholic countries like Ireland; that the priests here represent their congregations in synod, and vote in local legislation; that the priests, equally with the bishops, hold their office for life and enjoy the benefits of their contract for life—support in the ministry; that the priests elect the bishops; and that the entire organization is under the canon law passed from time to time in the councils of the Church, and matured by her illustrious experience. But this conjecture would be wholly mistaken. The fact is far otherwise.

What, then, is the fact? How are the Catholics of America governed?

The fact is, the Catholics of America—more than one-fifth of the population—are governed by absolute, irresponsible power, centered in the class of bishops, and wielded by them without regard of any law, civil or ecclesiastical. And so supreme is the arbitrary will of every individual bishop within his diocese that there is no appeal from his fiat. The editor of the New York *Freeman's Journal*, who is himself a leader of Catholic thought, an able and fearless advocate of the Church, has, with more truth than irony, nicknamed these bishops "the little popes of America." And a distinguished priest, writing in the *Freeman* (1869), describes them as "playing the triple rôle of judge, jury, and hangman." Nor is the description overdrawn. These American bishops accuse and condemn, expel and suspend, excommunicate and punish, without fear of accountability to any law. They have the

> "perilous mouths
> That bear in them one and the self-same tongue
> Either of condemnation or approof,
> Bidding the law make court'sy to their will."

They possess at once the legislative, judicial, and executive functions of government, which is the very definition and quintessence of tyranny. "No court or jury," says Judge Sharswood, of Philadelphia, "are invested with any arbitrary discretion to determine a cause according to their mere notions of justice. Such a discretion vested in any body of men would constitute the most appalling of despotisms." Now, taking these weighty words of an eminent jurist, what should be said of the power of the American bishops, whose mere notion or caprice determines every cause, and disposes of every person and thing, within the sphere of their office? It is manifestly an appalling despotism. "In America," says a writer in the *International Review*, "to such a degree do the laws on the one hand, and the absence of legislation on the other, favor the practice of absolute personal government on the part of the bishop that the unanimous protest of all the priests and all the people would have no more influence against the decision of his lordship than the whistling of the wind."

When we say despotism, we say slavery. Slavery, upheld in the sacred name of religion, pervades all the Catholic denomination in the United States. The mass of the laity, it is true, do not recognize the fact. Unaccustomed as those good people are to reflect on matters of such gravity in the Church, they merely follow the prescribed routine of their pious duties, little caring whether the authority controlling them is limited or absolute, lawful or despotic. The rites and ministrations of religion come to them all the same, and they are content. Here and there, I am glad to say, intelligent laymen appreciate and deplore the situation.

> "Adparent rari nantes in gurgite vasto."

But it is the priests on whom the oppression lies with the burden of a chronic nightmare. Being themselves a grade of the hierarchy and gentlemen by profession, they ought to feel most keenly sensitive to the usurpation that tramples on their rights. I say *usurpation*, because the atrocious tyranny existing in America would not be tolerated a single twelvemonth in any Catholic country. Bishops in France and Spain, Italy and Brazil, are careful to make no such pretension, but eschew the rôle of autocrats to avoid the penalty of exile or imprisonment for such conduct. And no one need be told how they are dealt with in Germany and Switzerland. It is evident that all other nations would confine bishops to their legitimate spiritual office, and forbid them the exercise of any powers not consistent both with the laws of the Church and the laws of the land. But in America they boldly repudiate the laws of the Church, and simply ignore the laws of the States. In America alone the government of the Church stands inversely related to political ideas and institutions. Where we enjoy the largest political freedom we suffer the worst form of ecclesiastical tyranny. This has been called "a puzzling paradox;" but if we glance below the surface, the explanation of the puzzling paradox is not far to seek.

Early in American history, and with a foresight worthy of a better cause, the bishops perceived in the generous policy of our government an opportunity to build up their class power, and were not slow to profit by the advantage. The avowed constitutional non-interference of the Federal government with religions of any kind gave them full scope to lay the foundations of the edifice in which they now reign as supremely as the Czar of Russia on his throne. And from the moment they first began to cherish their dominant ambition for class power their constant endeavor has been to exclude the canon law, subjugate the priesthood, and, through the priesthood, the docile multitude of believers. They have succeeded. The 4500 priests of America are reduced to a mere caste, and are so enslaved as to be mere tools in the hands of the bishops. The priests have no sort of representation; they have no voice in synod; none in the election or nomination of their masters, the bishops. Instead of holding their office for life, as the law of the Church guarantees, they are liable to be deprived of their rank and emoluments, and to be cast friendless upon the world by the caprice of the bishop's will. Their honor, their reputation, their livelihood, are at the mercy of the bishop. I might say their very life is at his mercy; for if you deprive men of the means of living—and the avocation of clergyman is the only one for which most of them are qualified—do you not virtually deprive them of life?

> "You take my life
> When you do take the means whereby I live."

In short, the 4500 priests are treated as having no rights which the bishops are bound to respect. And as this is an extreme assertion, reminding one of the famous Dred Scott decision, I will delay to prove it by an imaginary example. Take a case of the commonest right. Suppose a priest owns a horse and buggy, having bought and paid for them with his own money. The bishop covets this little property, and demands that horse and buggy be transferred to him. Now if the priest refuses to do so, and is at all stubborn, the bishop may take up his pen and write to the aforesaid priest as follows:

> "REV. SIR,—Your administration of the affairs connected with the church of St. Patrick has been such that I feel myself compelled to remove you and leave the church vacant. And I now forbid you to exercise any priestly faculties in Bishoptown, even to say mass. This prohibition binds *sub gravi*. You may call on me at my head-quarters, and I will inform you of my further intentions in your regard. But if I don't happen to be in good humor when you come, you had better not see me, as I might then be inclined to send you to —purgatory.
> (Signed) "GULIELMUS, Bishop of Hardknocks."

This note does the business. It throws the priest out of his office and living. But has the priest no remedy in the Church? He has, and he has not. He has, *de jure;* and he has not, *de facto*. The law of the Church provides for an ecclesiastical tribunal to try and adjudicate in all differences between priests and bishops. But the bishop interposes his *non placet*, and will not allow any such thing as an ecclesiastical tribunal in America. What, then, is left for the priest but to have recourse to civil law to enforce his *rights of contract* with the Church? And yet if he so falls back on his citizenship, he is likely to get excommunicated for his pains. In this state of facts, it is unnecessary to add, ninety-nine priests out of a hundred would surrender horse and buggy and quietly submit even to greater hardships in order to hold their places. Why, if they but complain of their grievances and murmur at oppression, they are heralded as guilty of treason; the mad-dog cry of scandal is raised against them; and they are swiftly visited with episcopal indignation in the shape of "spiritual penalties." Thus they are effectually muzzled, so that the world might never know any thing of their servitude and sufferings, except a rash rebel like myself runs the risks of speaking.

To have any conception of what are styled "spiritual penalties" in the Church, it should be remembered that when any one is punished with excommunication he is believed by all the faithful to be doomed to perdition. The Catholic populace conscientiously judge him to be beyond the pale of the Christian Church, that is, in their estimation, shut out from the Saviour's atonement, and damned for all eternity in advance, unless he so repent as to accept the terms dictated by "my lord bishop." I can assure the reader that it is far from comfortable to be thus marked out in so large a community, to be conscious that you are esteemed an outlaw, with God's wrath upon you in the present life, and nothing but hell fire awaiting you in the life to come. In this light, it ceases to be either a jest or a marvel that my fellow-Catholics of the laity entertain the sincerest veneration for episcopal mandates.

When a priest is the victim, when for any cause he incurs the ill will of the bishop, and thereby falls under ban and interdict, he becomes an object of suspicion and perhaps of scorn, as fallen from a high estate. In the eyes of the laity, except among the more intelligent and manly, he is no longer to be reverenced, but rather to be despised or pitied. They may hail him no more with the endearing appellation "father," but turn from him as "the accursed," sometimes denying him the charities and courtesies of life. Such is the effect of Catholic training in the interest of class power, and, alas! I know of many a noble-hearted brother priest driven into the very "slough of despond" before that odious, stupid public sentiment. Often the priests thus disabled are in want of bread. It was the bishop's policy to keep them poor and dependent while in office. When they get suspended, or "silenced," as the laity express it, their condition is poor indeed. They are forced to skulk like vagabonds in the by-paths and alleys of society, seeking relief from their former associates. These are *les misérables* of the priesthood, in whom are sometimes found recruits for wild adventure, and, apropos of their wretched condition, they are christened "the Gypsy priesthood." And yet many of these men, so cruelly hounded and persecuted, were the equals—nay, in virtue and talent the superiors—of the mitred tyrants who crushed them down, and many of them committed no other offense than that of showing a disposition to assert their manhood and their lawful rights.

> "Oh, but man, proud man,
> Dressed in a little brief authority,
> Most ignorant of what he's most assured—
> His glassy essence—like an angry ape,
> Plays such fantastic tricks before high heaven
> As make the angels weep."

The priests are slaves, and, at the same time, the instruments of the enslaving power. They are the men who move among the people, and talk to them and execute among them the orders of the bishops. Can any manner of life be more unenviable and insufferable? Why, if Professor Huxley were to classify us according to science, he would have to put us the lowest in the category of his "conscious automata." And if St. Paul were speaking for us, he would exclaim, "We are of all men the most miserable."

The enslavement of the priesthood is the main instrumentality of the class power of bishops. But they have other appliances likewise. They have the proprietorship of church property, and generally hold in fee-simple, not in trust, the title of churches, colleges, presbyteries, cemeteries, and other real estate. Hence they could oust the congregations from their houses of worship and the priests from their dwellings by peremptory mandamus. The very law of the land is thus made subservient to the bishop's *ego dico*.

Moreover, they have a so-called "religious" press at their disposal. Few bishops are without a newspaper to act as the organ of their official communications, circulating among the faithful, and supplying pabulum for their piety in the shape of articles laudatory of bishops and denunciatory of any thing counter to their interests or convenience. There is not a Catholic paper in

America that can afford to strike out, with any hope of success, independently of the bishops. It is to the credit of Mr. M'Masters that the New York *Freeman's Journal* undertook an independent course a few years since, and for a while dealt heavy blows at "the little popes of America." But even the *Freeman* is now silent, having found the independent course a bootless enterprise.

Thus pulpit, property, and press are suborned to sustain the tyranny of bishops and propagate their monstrous usurpations. I say *monstrous usurpation*, because it mutilates the canon law, deforms the Church Catholic, and violates Holy Writ. The Divine Master taught us all a great lesson when He rebuked the rising ambition of the sons of Zebedee, saying, "You know that the princes of the gentiles lord it over them: and they that are the greater, exercise power upon them. It shall not be so among you, but whosoever will be the greater among you, let him be your minister: and he that will be first among you, shall be your servant. Even as the Son of Man is not come to be ministered unto, but to minister." But what care our bishops for this salutary injunction? Alas! they breathe not the spirit of the meek and gentle Nazarene whose disciples they would fain appear. They are but proud princes of the earth, lording it over all they can.

"Woe to you scribes and Pharisees, hypocrites: because you are like to whited sepulchres, which outwardly appear to men beautiful, but within are full of dead men's bones, and of all filthiness. So you also outwardly indeed appear to men just; but inwardly you are full of hypocrisy and iniquity."

Now, however much I reprobate the tyranny of these bishops, I should admire their consistency if, while they withheld the canon law from the priests, they refused for themselves the benefits of its protection. But while they have steadily excluded the laws of the Church calculated to secure an independent clergy, they have managed with singular tact and cleverness to retain all the canon laws bearing on their own office. Every bishop in America holds his office for life under the law of the Council of Trent, and is just as independent as the Bishop of Dublin, Paris, or Vienna. The Pope even could not remove or suspend an American bishop save by process of the canon law and after the fairest and fullest trial before his peers. This curious anomaly is aptly described in the New York *Freeman* as "bishops with *fixed* tenures and a priesthood all *afloat*."

Am I not correct, then, in designating this class power of bishops a monstrous usurpation, a tyranny, a despotism? Though these are severe words, I am not acquainted with any milder or softer words that would express the fact. The fault is with the fact, not mine. On what ground did the colonists shake off their allegiance to George III. and characterize him a tyrant? Was it not because he denied them the common rights of Englishmen? So I characterize the American bishops tyrants because they deny Catholic priests and people the rights guaranteed by the laws of the Church.

But some one asks is this extraordinary and astonishing power of bishops established avowedly for the sake of power, or do they advance any plea for their peculiar and despotic sway? They are pleased to inform us that *the interests of religion* demand it; that the Church can not otherwise prosper in the United States. Their chief argument, every where insisted on, is that the United States is "a missionary country;" and from this they infer that it is fit only for absolute personal government by them. That is to say, you are all heathens, are, at best, semi-civilized, and can not be controlled except by a species of dictatorial authority suited to barbarous nations. And we Catholics, who in other parts of the world are regulated by the machinery of laws and courts, have the misfortune of living in America among the heathen, and must therefore be satisfied with "ways that are dark and tricks that are vain." But, seriously, this argument is an adroit sophism, a specious fallacy, that requires to be calmly and carefully confuted. The Catholic Church does allow what is called "missionary discipline" in two sets of circumstances, namely, in heathen lands, and in those where the civil government prohibits the free exercise of Catholic worship. In England, for instance, Catholicism was proscribed by penal statutes from the Reformation to the first half of the current century, and Rome therefore classed England with missionary countries like China and Japan. Accordingly, the few Catholics scattered through England were governed by the missionary discipline until 1850, when the hierarchy was restored under Cardinal Wiseman. The missionary discipline does mean personal government under special and occasional instructions from Rome, and it is the quasi-military government of the Church, as contradistinguished from the regular constitutional government of the canon law. It is carried on, however, not by true canonical bishops, but by officials known as vicars apostolic, who may be recalled and dismissed any day of the week; whereas our American bishops are true canonical bishops, and hold for life under the canon law. For the rest, it would be sheer calumny and absurdity to say that this republic prohibits even the completest exercise of Cathloicism. The Holy Father himself is reported to have said more than once of late that America is the only country in which his authority is untrammeled. Hence, if the bishops' plea that this is a missionary country be true in any sense, it signifies that, from the Catholic point of view, we are yet considered heathens, like the Chinese and Japanese. But in reality this plea is a mere pretext to allay suspicion and hide the ambition of lordly prelates.

I have said bishops act without regard of any law, civil or ecclesiastical. This is no exaggeration. It is abundantly proved that they reject the canon law, except that portion of it necessary to secure their own positions. As to the civil laws, they are treated as of no moment whatever, and are put entirely in abeyance wherever they would conflict with the interests of the bishops. No Catholic dares to sue a bishop except at the peril of his soul's salvation, and thus Catholics are practically debarred, as far as bishops are concerned, from enjoying the common rights of citizenship. The law of the land might as well be blotted out when there is question among Catholics of the power of bishops. A striking proof of this occurred a couple of years ago at Kalamazoo, Michigan. The resident priest at Kalamazoo was engaged in erecting a church, and falling short of sufficient money to finish the building, he borrowed from Patrick Bunbury, a devoted Irish Catholic, the sum of $10,000. Bunbury obtained the money by mortgaging his farm, having been assured of repayment in time to prevent any embarrassment to himself or his family. The church was finished, and then the holder of Bunbury's mortgage required it to be canceled. Bunbury applied to the priest for relief. The priest referred him to the bishop, informing him that the bishop held the title of the property. Bunbury next applied to Bishop Borgess, of Detroit, who promised to meet the obligation, but failed to do so in the time agreed upon. The mortgagee, becoming anxious, now threatened Bunbury with foreclosure; and as this would have been ruinous to himself and his family, Bunbury, under pressure of necessity, was compelled to sue the bishop for recovery of his money.

The reply to his suit was the fulmination of anathema against him, and the generous benefactor of his religion was branded as an excommunicate in the church he had so liberally assisted in building; nay, more, Bishop Borgess publicly expelled poor Bunbury from the holy communion in that same church. And when Bunbury, conscious of his rectitude in the faith and training of the Catholic religion, ventured to inquire the reason for such cruel treatment, the bishop promptly answered, "Because you have dared to sue a bishop of the Church." Unable to bear up under the weight of odium thus cast upon him (for to the Catholic mind nothing is so terrible as excommunication from the sacraments of the Church), Bunbury, who was already far advanced in age, yielded to the blow, repined, and died soon after. Even when, in the hour of death, he begged for the last rites of the Church, he was told that he should not have the consolations of the dying until he arranged to withdraw his suit. And he so arranged, and the suit was abandoned. This act of cruelty aroused a sentiment of honest, manly indignation in the community, and Catholic and Protestant united in petitioning the Legislature of Michigan to enact a stringent law to prevent the occurrence of so gross an outrage upon a citizen of the State. A bill similar to the Prussian laws touching ecclesiastical authority was introduced in the State Senate, and there passed unanimously, but was defeated in the Lower House by timid, truckling politicians. The bill provided that any archbishop, bishop, or other ecclesiastic attempting, *under pretense of ecclesiastical censure*, to deprive a citizen of his civil rights or property, shall be subject to fine or imprisonment, or both, at the discretion of the courts.

"Forsan hæc olim meminisse juvabit."

I was myself pronounced excommunicate in my own church at Williamsport, by Bishop O'Hara, for having dared to cite him in the courts of Pennsylvania. But fortunately the consequence has not been quite so disastrous to me as it was to the poor fellow in Michigan, whose faith was greater than his intelligence, to whom the very heavens became as brass after the dreadful sentence of excommunication was fulminated against him. I have considered Bishop O'Hara's pronouncement a mere *brutum fulmen*, without moral efficacy or validity. I do not believe, having all due respect for the authority of the Church, that any man, though clothed in episcopal robes and wearing a mitre, can arbitrarily come in between man and his Creator, and separate the human soul from the redeeming grace of Christ. In the light of sound reason such pretension is blasphemous.

"'Tis mad idolatry
That makes the service greater than the God."

[TO BE CONCLUDED NEXT WEEK.]

## RELIGIOUS INTELLIGENCE.

### Calendar.

JULY.

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| *Sunday,* | 4.—Sixth Sunday after Trinity. |
| *Sunday,* | 11.—Seventh Sunday after Trinity. |
| *Sunday,* | 18.—Eighth Sunday after Trinity. |
| *Sunday,* | 25.—St. James; Ninth Sunday after Trinity. |

AUGUST.

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| *Sunday,* | 1.—Tenth Sunday after Trinity. |
| *Sunday,* | 8.—Eleventh Sunday after Trinity. |
| *Sunday,* | 15.—Twelfth Sunday after Trinity. |
| *Sunday,* | 22.—Thirteenth Sunday after Trinity. |
| *Tuesday,* | 24.—St. Bartholomew. |
| *Sunday,* | 29.—Fourteenth Sunday after Trinity. |

THE arrival of the Sultan of Zanzibar, **SAYYID BARGHASH**, in England recalls the earnest efforts of **LIVINGSTONE** to bring to an end the slave-trade which ravages the interior of Africa. When the intrepid explorer started on his last expedition he took with him a letter of credence from the Sultan then reigning (**SAYYID MAJID**), which was respected by the natives and Arabs whom he met. The hold of the Sultan of Zanzibar on the tribes of the interior is not very firm, but it is something. It is to be hoped that during this visit the Christians of England will make it clear to the Sultan's mind how much the slave forays of his Arab subjects depress legitimate trade. The new Sultan, who is the brother of his predecessor, is about thirty-eight years of age, of middle height, fine manners, and unusual intelligence for an Arab Moslem.

Scotland has lost two of its distinguished ministers, the Rev. Dr. **THOMAS M'CRIE** and the Rev. Dr. **WILLIAM ARNOTT**. Dr. **M'CRIE** was the son of a famous minister of the same name, and in 1856 became Professor of Systematic Theology in the English Presbyterian College, London. Dr. **ARNOTT** was well known in this country, where his geniality and eloquence had made for him hosts of friends.

Several members of the late Protestant Episcopal Convention of Iowa have published a letter in which they deny the charge that Bishop **ECCLESTON** was unfairly elected. **JACOB SHAW SHIPMAN**, of Lexington, Kentucky, has been elected Bishop of the new diocese of Fond du Lac, Wisconsin.

The movement of the English Non-conformists to obtain the unrestricted use of the parish church-yards for burial has become so formidable that the government is disposed to compromise. It will be remembered that at its last reading in the House of Commons Mr. **MORGAN**'s bill was defeated by a very small majority. A conference, it is reported, has been held between leading London clergymen and leading Non-conformist ministers, at which it was determined that the church-yards should be thrown open.

The importance of this concession arises from the fact that it is the surrender of one of the outworks of the state Establishment. The Liberation Society has so far impressed its opinions on the English people that there is already a rumor of an understanding with moderate Nonconformists for the purpose of saving the Church. The rumor is not incredible, although it is indignantly denied by the *English Independent*.

The excitement in Belgium over the religious processions does not subside. The assailants are mostly students. On the last Sunday in May processions were held in Brussels, Antwerp, and Ghent, with some disturbance on the part of the crowd, but no serious outbreak. The week following was marked by a number of street fights. Many arrests have been made, and several sentences to short terms of imprisonment imposed. The *Etoile Belge* expresses the opinion that it is absolutely necessary for the priests to preach peace and concord to their people.

The union of the Presbyterian Churches of Canada has been effected according to the programme announced. Dr. **COOK**, of Quebec, was elected the first Moderator of the United Assemblies.

The statistics of the (German) Reformed Church, as reported at the General Synod recently held at Fort Wayne, Indiana, give a total of six district synods, 637 ministers, 107 candidates for the ministry, 144,351 members, 89,568 baptized members not confirmed, and $497,217 contributed to general and local benevolence in three years. Comparing these statistics with those reported at the Synod of 1872, there appears an increase of 51 ministers, 43 congregations, and 14,050 members.

The appeal of the Rev. Mr. **KEET**, the Wesleyan minister who described himself as "Reverend" on the tombstone which he wished to set up in the church-yard of Owston Ferry, has been decided against him by the chancellor of the diocese of Lincoln. The chancellor held that this title belonged exclusively to the clergy of the Church of England, and that to permit its appropriation by dissenting ministers would encourage schism. An appeal was taken from his decision.

The Scotch Patronage Act, which was intended to reunite the Free and State Presbyterian Churches together, has wholly failed of effect, if we may judge from the proceedings of the two Assemblies. In the Free Church Assembly a resolution declaring that the Free Church had attained a position in which it is not prepared for re-establishment, and that the union between church and state ought to be brought to an end, was adopted by a vote of 397 to 84. The Sustentation Fund of this Church has reached the extraordinary sum of £164,330. Dr. **HENRY M. FIELD**, the editor of the New York *Evangelist*, who was present at the closing sessions of the Assemblies, writes thus of the prospects of Scotch Presbyterian union: "The negotiations with the United Presbyterians are in abeyance. In fact, the Scotch can not very well unite with any body. Their very nature is centrifugal, rather than centripetal. They love to argue, and the more they argue the more positive they become. The conviction that they are right is absolute on both sides. Whatever other Christian grace they lack, they have at least attained to a full assurance of faith."

Bishop **WHITTINGHAM** appears to be the first dignitary of the Protestant Episcopal Church to whom the new law on ritualism has given serious trouble. The law went into effect on the 1st of January last. Notice was given to him that practices were followed in the Mount Calvary Church, Baltimore, inconsistent with the Episcopal canons and doctrines. Upon his declining to interfere, two of his presbyters have presented him for neglect of duty. The case has created no little excitement in the Protestant Episcopal Church.

In these days of commemorations, **DE FOE**, the author of *Robinson Crusoe*, is to have his share of recognition. He was the organizer of the Non-conformist church at Tooting, near London, and a memorial manse for the occupancy of the minister will be erected in that suburb. **BUNYAN**, **WATTS**, **DE FOE**, have thus in succession been honored as dissenters from the state Church. At present dissent in England holds up its head very bravely.

The Rev. Mr. **SOMERVILLE**, of the Free Church of Scotland, who has been spending several months in India as an evangelist, has had an efficient co-operator in the Rev. **SHOLTO DOUGLAS**, vicar of All-Saints, Derby. Mr. **DOUGLAS** began among the adherents of the Church of England in Bombay, but presently joined Mr. **SOMERVILLE**. The two labored in perfect harmony. Of the effect of their preaching it is reported that the natives "have been immensely stirred and moved, and led to think more seriously than in many instances they ever did before of the Christian faith and doctrine." The plan of inviting distinguished ministers of England and America to make winter preaching tours in India appears, therefore, to work well.

The *Unitas Fratrum*, or Church of the United Brethren, after an existence of four hundred years, reveals no decay of vitality. The latest statistics for America show that the number of communicants has doubled since 1855. It has now 15,308 members. The whole number of members in all the world is 98,227, to which are to be added 80,000 persons connected with the state Churches of Europe who attend Moravian ministrations. It has always been a part of the plan of the Brethren to form societies within the churches for Christian edification. This body is the only one in Protestantism which is strictly œcumenical, although the leading Churches in the United States are, through their missions, rapidly taking on this character.

The public-school question in the United States will not "down." It is apparent to every careful observer of public events that each year the lines are drawn with greater rigor on the part of the Roman Catholic Church. First the Bible in the State schools was denounced; now the schools themselves are assailed as a standing menace to the Roman Catholic religion. One of the plainest utterances which have appeared of late is from the *Catholic Telegraph* of Cincinnati. It is worthy of record, as showing the animus of the opposition to the public-school system:

> "The forty-seventh and forty-eighth articles of the Syllabus have authoritatively settled for all time that the exclusion of religious instruction from daily education is a damnable religious error, which Catholics can not approve without a denial of faith and commission of sin. Legislation does, therefore, as far as Catholics are concerned, interfere with the subject of religion. The State has no inherent authority to exclude religion from public education. When it does so, it plays the tyrant, clothing itself with a commission of power for which it can show no warrant.
>
> "The present system of public schools brands Catholic faith as a crime, and the American State punishes it yearly by fines equal in amount to the sum which Catholics are compelled to expend after the payment of school tax upon the Catholic education of their children. The American school law is a penal enactment against the Catholic religion, originating and perpetuated in the same spirit that has driven the educating orders of the Church from the soil of Germany. It does not lighten the grievance, it does not extenuate its injustice, to appeal to the denial of the right of Protestants to have their children educated in their faith. The injury inflicted by the hand of the State upon one party is no atonement, for a wrong can be no justification of an injury done to another. If Protestants are willing to adopt the teaching of infidelity, this willingness does not confer upon any political organization the authority to compel Catholics to pursue the same course of apostasy."

That will do for one time.

## HUMORS OF THE DAY.

A YOUNG man who had become smitten with a South-western beauty, who was the daughter of a blooming widow, after a protracted courtship plucked up sufficient courage to propose, when the damsel replied, "I should be glad to accommodate you were I not already engaged; but ma wishes to marry, and I think she is just now without an engagement." The young man left for his childhood's home.

What pupil gets most punishment?—The pupil of the eye, for it is continually under the lash.

A proprietor of a cotton mill, who is something of a philosopher, posted up on the factory gate the following notice: "No cigars or good-looking men admitted." When asked for an explanation, he said, "The one will set a flame agoing among my cottons, and t'other among the gals. I won't admit such inflammable and dangerous things into my establishment—no, Sir!"

A beggar-boy made an application to a farmer's wife in Scotland for relief, and was refused on the ground that she "had no copper;" to which the little urchin very accommodatingly replied, "I take siller, mem."

A good-for-nothing fellow left his wife in a great rage, telling her that he would never come back till he was rich enough to come in a carriage. For once he kept his word, being trundled home drunk in a wheelbarrow.

The reason why whales frequent the arctic seas is probably because they supply the "northern lights" with oil.

FRUIT FOR BALLOONISTS—Currents in the air.

Fame is like an eel—rather hard to catch, and a good deal harder to hold.

"Miss Smith, may I ask the time?" said Sprig, last evening. Lady consults her dummy watch. "Certainly, Mr. Sprig—let me see—about, I should say about—time to go home." Sprig inserts his head into his tile with an emphasis, and bids Miss Smith good-evening with a jerk.

Some philosophers were disputing very learnedly on the antiquity of the world. A man of wit, tired of their long discussion, said, "Gentlemen, I believe the world acts like some ladies, and does not choose to have her age discovered."

The learned Professor Porson had a great horror of the east wind, and Tom Sheridan is said to have once kept him a prisoner in the house for a fortnight by fixing the weather-cock in that direction.

"What are you about?" inquired a lunatic of a cook, who was industriously picking the feathers from a fowl. "Dressing a chicken," answered the cook. "I should call that undressing," replied the crazy fellow. The cook looked reflective.

"Do you believe in forerunners?" asked a nervous lady of old Deacon I——. "Yes, ma'am," replied the deacon; "I've seen them." "Bless me!" exclaimed the lady; "do tell!" "Yes," continued the deacon, fixing his eyes with a solemn stare on a dark corner of the room; "*I see one now!*" "Mercy! mercy on me!" shrieked the lady; "where?" "There! there!" said the deacon, pointing to where his eyes were directed. "That cat, ma'am, may be called a forerunner, for she runs on all fours."

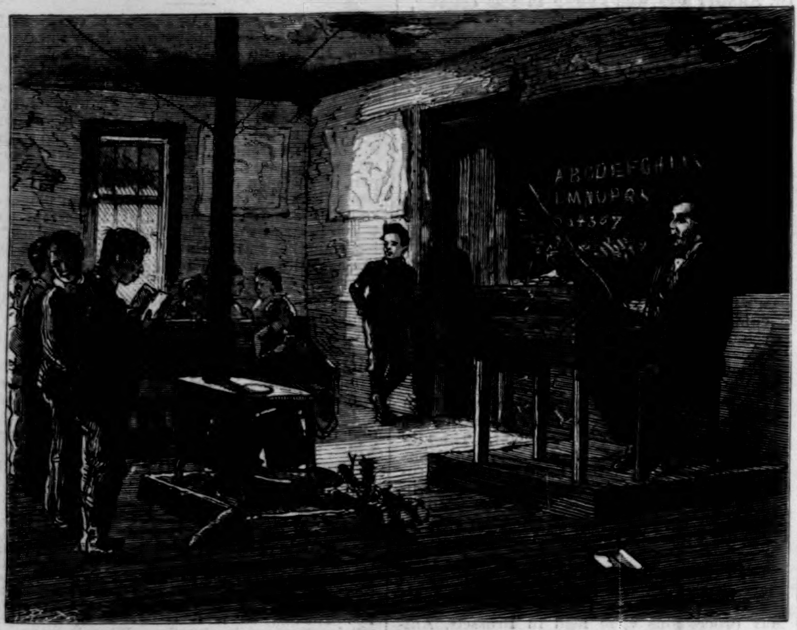
The *Christian at Work* tells of one Sunday-school boy who on being asked, "What land was it to which the Israelites came after crossing the Jordan?" answered, naturally enough, "I think it was dry land." Also of another who throws aside his library book disdainfully as "worth nothing," because "the boy don't marry the girl at the end."

[Entered according to Act of Congress, in the Year 1875, by Harper & Brothers, in the Office of the Librarian of Congress, at Washington.]

# THE SCHOOL-MASTER'S GUESTS.

## A FARM LEGEND.

By WILL CARLETON.



"THE DISTRICT SCHOOL-MASTER WAS SITTING BEHIND HIS GREAT BOOK-LADEN DESK."

### I.

The district school-master was sitting behind his great book-laden desk,
Close-watching the motions of scholars, pathetic and gay and grotesque.

As whisper the half-leafless branches, when Autumn's brisk breezes have come,
His little scrub-thicket of pupils sent upward a half-smothered hum;

Like the frequent sharp bang of a wagon, when treading a forest path o'er,
Resounded the feet of his pupils, whenever their heels struck the floor.

There was little Tom Timms on the front seat, whose face was withstanding a drouth,
And jolly Jack Gibbs just behind him, with a rainy new moon for a mouth;

There were both of the Smith boys, as studious as if they bore names that could bloom,
And Jim Jones, a heaven-built mechanic, the slyest young knave in the room,

With a countenance grave as a horse's, and his honest eyes fixed on a pin,
Queer-bent on a deeply laid project to tunnel Joe Hawkins's skin.

There were anxious young novices, drilling their spelling-books into the brain,
Loud-puffing each half-whispered letter, like an engine just starting its train;

There was one fiercely muscular fellow, who scowled at the sums on his slate,
And leered at the innocent figures a look of unspeakable hate,

And set his white teeth close together, and gave his thin lips a short twist,
As to say, "I could whip you, confound you! could such things be done with the fist!"

There were two knowing girls in the corner, each one with some beauty possessed,
In a whisper discussing the problem which one the young master likes best;

A class in the front, with their readers, were telling, with difficult pains,
How perished brave Marco Bozzaris while bleeding at all of his veins;

And a boy on the floor to be punished, a statue of idleness stood,
Making faces at all of the others, and enjoying the scene all he could.

### II.

Around were the walls gray and dingy, which every old school-sanctum hath,
With many a break on their surface, where grinned a wood-grating of lath.

A patch of thick plaster, just over the school-master's rickety chair,
Seemed threat'ningly o'er him suspended, like Damocles' sword, by a hair.

There were tracks on the desks where the knife-blades had wandered in search of their prey;
Their tops were as duskily spattered as if they drank ink every day.

The square stove it puffed and it crackled, and broke out in red-flaming sores,
Till the great iron quadruped trembled like a dog fierce to rush out-o'-doors.

White snow-flakes looked in at the windows; the gale pressed its lips to the cracks;
And the children's hot faces were streaming, the while they were freezing their backs.

### III.

Now Marco Bozzaris had fallen, and all of his suff'rings were o'er,
And the class to their seats were retreating, when footsteps were heard at the door;

And five of the good district fathers marched into the room in a row,
And stood themselves up by the hot fire, and shook off their white cloaks of snow;

And the spokesman, a grave squire of sixty, with countenance solemnly sad,
Spoke thus, while the children all listened, with all of the ears that they had:

"We've come here, school-master, intendin' to cast an inquirin' eye 'round,
Concernin' complaints that's been entered, an' fault that has lately been found;
To pace off the width of your doin's, an' witness what you've been about,
An' see if it's payin' to keep you, or whether we'd best turn ye out.

"The first thing I'm bid for to mention is, when the class gets up to read;
You give 'em too tight of a reinin', an' touch 'em up more than they need;
You're nicer than wise in the matter of holdin' the book in one han',
An' you turn a stray *g* in their doin's, an' tack an odd *d* on their *an'*;
There ain't no great good comes of speakin' the words so *polite*, as *I* see,
Providin' you know what the facts is, an' tell 'em off jest as they be.
An' then there's that readin' in corncert, is censured from first unto last;
It kicks up a heap of a racket, when folks is a-travelin' past.
Whatever is done as to readin', providin' things go to *my* say,
Sha'n't hang on no new-fangled hinges, but swing in the old-fashioned way."

And the other four good district fathers gave quick the consent that was due,
And nodded obliquely, and muttered, "*Them 'ere is my sentiments tew.*"

"Then, as to your spellin': I've heern tell, by them as has looked into this,
That you turn the *u* out o' your labour, an' make the word shorter than 'tis;
An' clip the *k* off o' yer musick, which makes my son Ephraim perplexed,
An' when he spells out as he ought'r, you pass the word on to the next.
They say there's some new-grafted books here that don't take them letters along;
But if it is so, just depend on't, them new-grafted books is made wrong.
You might just as well say that Jackson didn't know all there was about war,
As to say that old Spellin'-book Webster didn't know what them letters was for."

And the other four good district fathers gave quick the consent that was due,
And scratched their heads slyly and softly, and said, "*Them's my sentiments tew.*"

"Then, also, your 'rithmetic doin's, as they are reported to me,
Is that you have left Tare an' Tret out, an' also the old Rule o' Three;
An' likewise brought in a new study, some high-steppin' scholars to please,
With saw-bucks an' crosses and pot-hooks, an' *w*'s, *x*, *y*'s, an' *z*'s.
We ain't got no time for such foolin'; there ain't no great good to be reached
By tiptoin' childr'n up higher than ever their fathers was teached."

And the other four good district fathers gave quick the consent that was due,
And cocked one eye up to the ceiling, and said, "*Them's my sentiments tew.*"

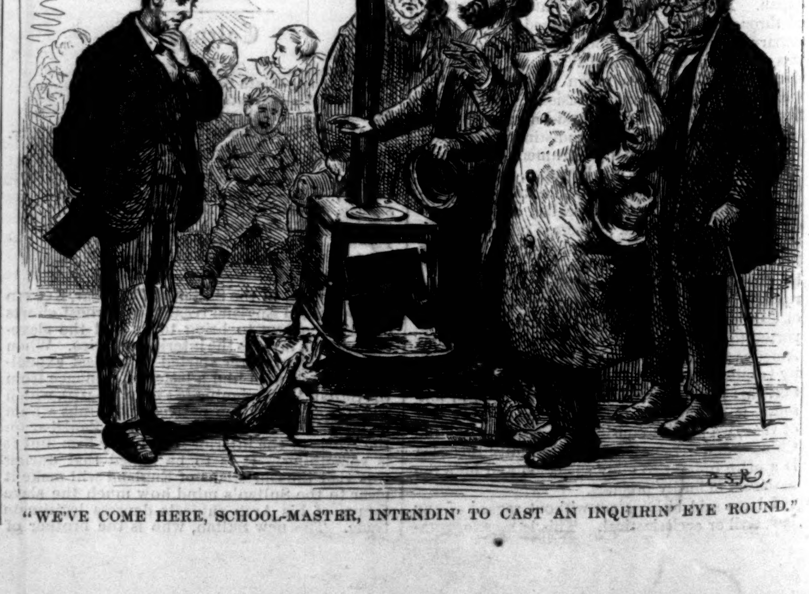
"Another thing, I must here mention, comes into the question to-day,
Concernin' some things in the grammar you're teachin' our gals for to say.
My gals is as steady as clock-work, an' never give cause for much fear,
But they come home from school t'other evenin' a-talkin' such stuff as this here:
'*I love*,' an' '*Thou lovest*,' an' '*He loves*,' an' '*Ye love*,' an' '*You love*,' an' '*They—*'
An' they answered my questions, 'It's grammar'—'twas all I could get 'em to say.
Now if, 'stead of doin' your duty, you're carryin' matters on so
As to make the gals say that they love you, it's just all that *I* want to know;—"

### IV.

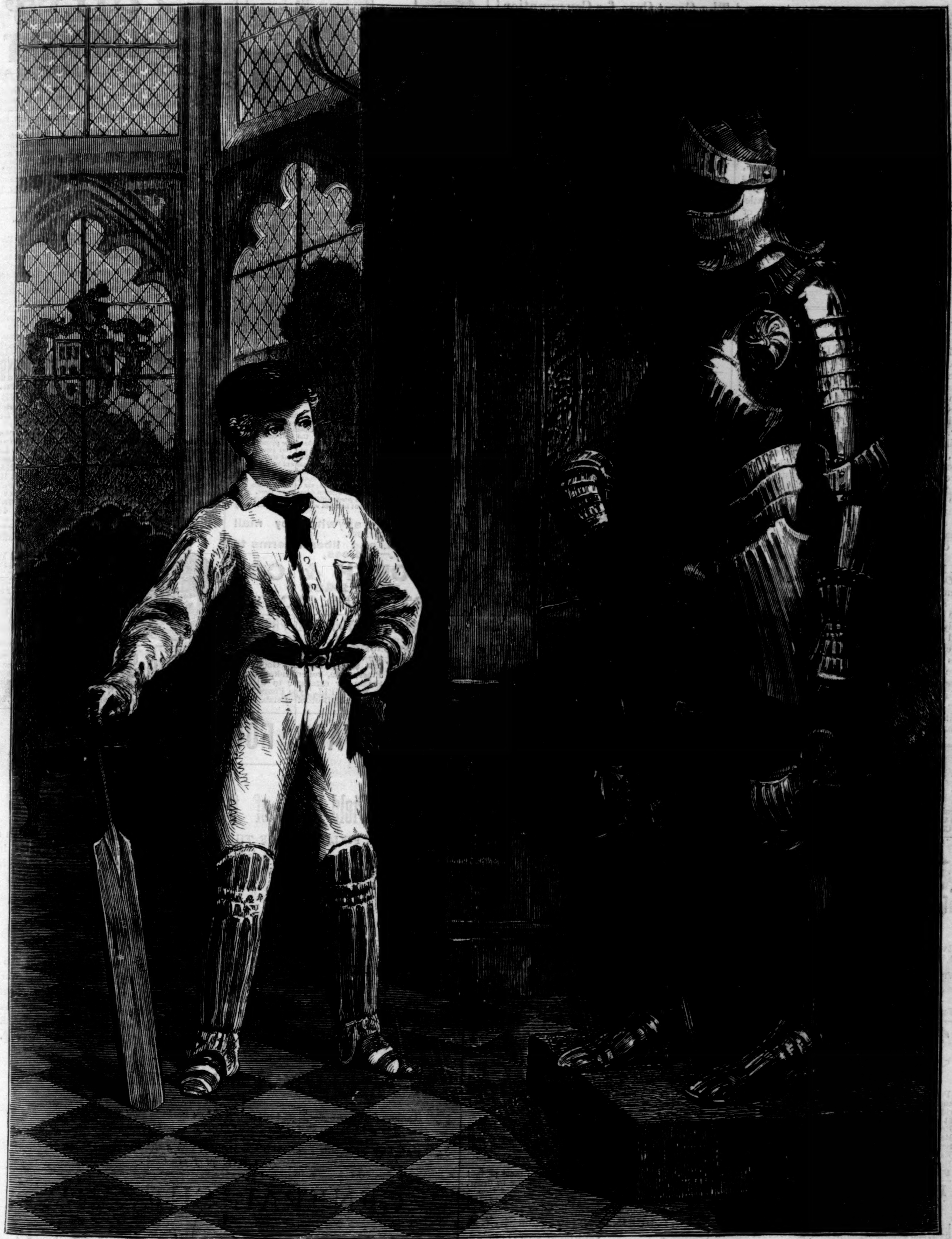
Now Jim, the young heaven-built mechanic, in the dusk of the evening before,
Had well-nigh unjointed the stove-pipe, to make it come down on the floor;
And the squire bringing smartly his foot down, as a clincher to what he had said,
A joint of the pipe fell upon him, and larruped him square on the head.

The soot flew in clouds all about him, and blotted with black all the place,
And the squire and the other four fathers were peppered with black in the face.
The school, ever sharp for amusement, laid down all their cumbersome books,
And, spite of the teacher's endeavors, laughed loud at their visitors' looks.

And the squire, as he stalked to the doorway, swore oaths of a violet hue;
And the four district fathers, who followed, seemed to say, "*Them's my sentiments tew.*"



"WE'VE COME HERE, SCHOOL-MASTER, INTENDIN' TO CAST AN INQUIRIN' EYE 'ROUND."



"WHAT A JOLLY WICKET-KEEPER HE WOULD MAKE!"

## RAVENS AND MAGPIES.

IN Sweden the ravens which scream by night in forest swamps and wild moors are held to be ghosts of murdered men whose bodies have been hidden in these spots by their undetected murderers, and not had Christian burial. Danish tradition says: "The night raven is an exorcised spirit. There is a hole in its left wing, caused by the stake driven into the earth where a spirit has been exorcised. One must take care not to look up when the bird is flying overhead, for he who sees through the hole in its wing will become a night raven himself, and the night raven will be released. It is ever flying toward the east, in hopes of reaching the Holy Sepulchre, for when it arrives there it will get rest."

The following Cornish story presents the raven under another aspect, while it exhibits the Cornishman in his least favorable character—that of a wrecker: A quarryman was once working under a large block of stone, which was on the point of falling. He was quite unconscious of his danger; but a raven perceived it, and resolved to save him. So the bird picked up a pebble, and dropped it on the miner's head. "Get along, you foul creature!" cried the man, as he continued his work. Nothing daunted, the raven picked up another stone, and dropped it as before. The fellow swore, but did not move a step. Then the bird flew to the shore, seized a bit of wood from a wreck, and dropped it before the quarryman. "Halloo!" exclaimed he; "where that came from there is more to be got," and flinging away pick and shovel, he rushed off to the beach. Down crashed the rock, but, thanks to the raven, the quarryman was safe. So the raven is not without friends to speak in his favor, although his inky feathers and croaking voice cause him usually to be regarded as a bird of ill omen.

The magpie is considered in Sweden a downright witches' bird, belonging to the Evil One and the other powers of night. When the witches on Walpurgis take their night ride to Blakulli, they go in the form of magpies. These birds moult in the summer, and become bald about the neck. Then the country people say they have been to the Blakulli and helped the Evil One to get his hay in, and that the yoke has rubbed their feathers off.

A north-country servant thus accounted for the unluckiness of the magpie to her master. "It was," the girl said, "the only bird that did not go into the ark with Noah. It liked better to sit outside jabbering over the drowned world." Yet, uncanny as the creature is, and mischievous too, there are parts of the Continent where no one dares kill it. An English traveler in Sweden once saw a flock of magpies greedily devouring the pig's food, and having a gun with him, offered to shoot some. He did so, and the farmer thanked him heartily, but expressed hopes that no harm might befall him in consequence.

A gentleman visiting in the county of Durham was once being driven across the country by an old lady on the way to the house of a friend. Suddenly the ponies were brought to a stand. Looking around for a reason, the traveler saw her gazing intently on a magpie which was just crossing the road. "Oh, the nasty bird!" exclaimed the old lady. "Turn back; turn back." Remonstrance was useless, the magpie having crossed the path before them she refused to go on, and the visit was not made. One lady in Yorkshire pleads guilty to making a cross in the air when she sees a magpie crossing her path, by way of dispelling the ill luck attending the bird.

The story is also told in Yorkshire of a gentleman who, on his way to deposit a large sum of money in a certain bank, had his path crossed by a magpie. He immediately turned back, but intended to go again the next day. In the morning he heard that the bank had suddenly failed, and it only remained for him to congratulate himself on his prudent attention to the magpie's warning.

## PIMPLES, ERUPTIONS, ROUGH SKIN.

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*Com.*] Mrs. A. W. Williams.

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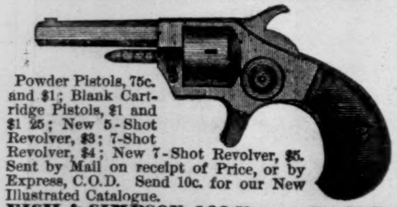

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Mr. Geo. L. Burr: Suit, overcoat, and shirts came yesterday, and all are satisfactory. F. W. Conard.

Waverly, N. Y., April, 1875.
Mr. Geo. L. Burr: I have received the clothing today, and am very well pleased. Jas. E. Ruhey.

Marion, Ind., April 19th, 1875.
Messrs. Freeman & Burr: The clothing for Mr. Radway and myself came all right, and gives entire satisfaction; fits as well as any we ever had made. Send summer samples; want six suits. Dan Mitchell.

Newton, Kan., April 25th, 1875.
Messrs. Freeman & Burr: The hat was received in good order, and is a good fit and all O. K. Accept thanks. A. C. Ferelenck.

Monticello, Fla., April 30th, 1875.
Mr. Geo. L. Burr: My suit of clothes came duly to hand. Am glad to inform you that they fit admirably, and that I am very much pleased. Keep measure. John Dabney Palmer.

Stanton, Mo., March 6th, 1875.
Mr. Geo. L. Burr: Pants came to-day all right. Keep my measure: will order again. Thos. Harris.

Raleigh, N. C., May 15th, 1875.
Mr. Geo. L. Burr: The suit ordered of you has arrived, and gives satisfaction. The fit is admirable. Retain measure. Fab. H. Busbee.

Oxford, Miss., May 21st, 1875.
Mr. Geo. L. Burr: Box clothing received and contents all right. Alex P. Stewart.

Abbeville C. H., S. C., Feb. 27th, 1875.
Mr. Geo. L. Burr: The pants and vest have come to hand, and I am very much pleased. Never had a more perfect fit. Wm. A. Briggs.

Durant, Miss., March 18th, 1875.
Geo. L. Burr: The suit got in just in time for the wedding. We understand it was a splendid fit. J. H. & R. W. Johnson.

Fort Dodge, Ia., May 5th, 1875.
Mr. Geo. L. Burr: Suit fits admirably. It beats those professed experts. E. K. Shaw.

El Paso, Tex., April 10th, 1875.
Geo. L. Burr, Esq: The two suits for the Messrs. Coldwell came to hand to-day. The selection is satisfactory and fit superb. S. C. Slade.

Fort Stevenson, D. T., May 3d, 1875.
Geo. L. Burr: Pants arrived all right. There was some mistake in the Registry. They please me very much. Garland, *Hosp. Steward, U. S. A.*

Cisco, Cal., April 10th, 1875.
Mr. Geo. L. Burr: The clothes received, and we are highly pleased with them. Fit nicely, and the style as desired. H. A. Olmstead.

Bowling Green, Ky., May 8th, 1875.
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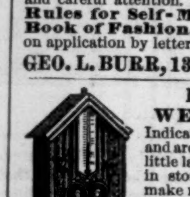

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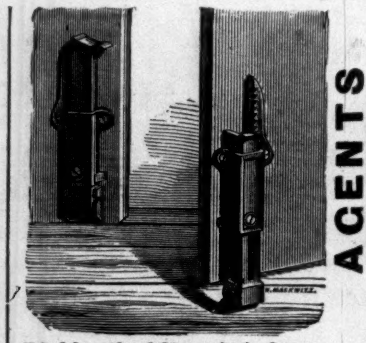

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The mode of operation is fully shown on the right side of the picture, which shows a *right hand stop* on a door partly open, and held firmly in its place by the Stop. When you wish to fasten a door at any angle, you open it to the desired point, then you press the Stop down firmly with the toe of the boot or shoe, placed on the *pivotal button* or *catch* which you see at the top of the bolt. When the Rubber block is pressed down firmly on to the floor or carpet, give your foot a slight *forward tilt*, and the button catches in the notches of the Ratchet and holds the Rubber block firmly to the floor or carpet, thus holding the door *just exactly where you place it*, no matter whether it is open *an inch*, *three inches*, or *wide open*, and there the door stands until you loosen it, *no matter how hard the wind blows*. The Rubber block is fitted into the jaws at the foot of the bolt, and being soft and yielding, does not damage the floor, or the *finest carpet* in the least.

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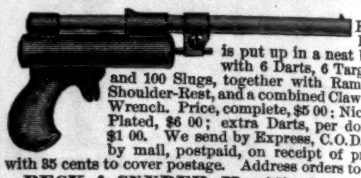

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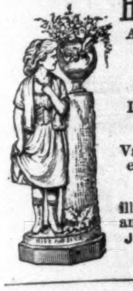

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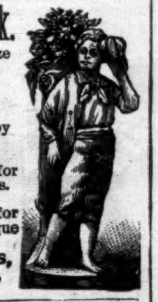

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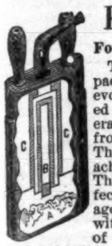

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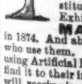

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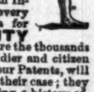

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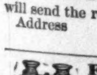

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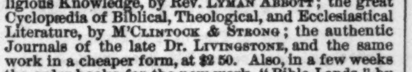

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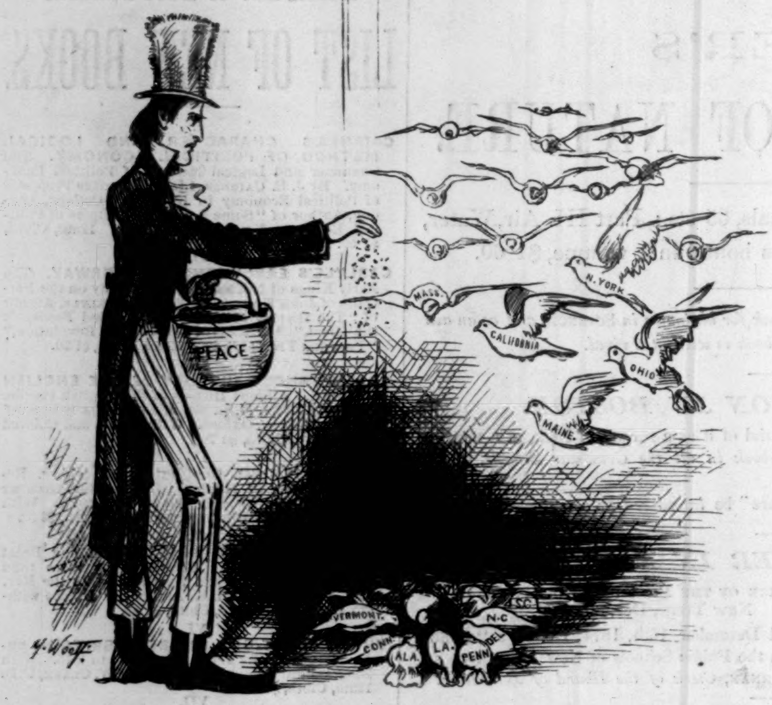

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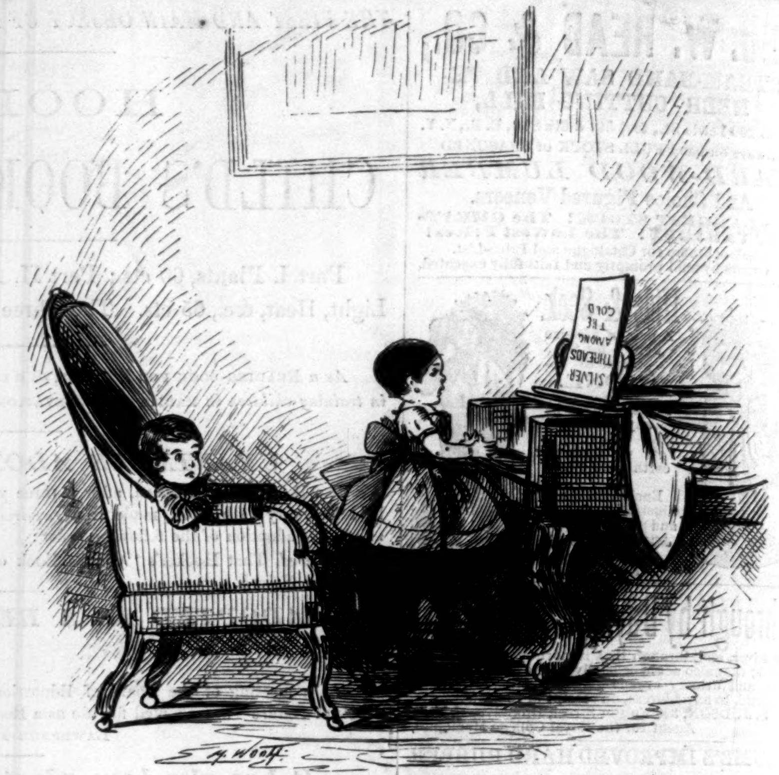
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# REVIEW OF RECENT INVENTIONS.

## By EDWARD H. KNIGHT.

[Second Article.]

THERE is a fashion in invention; not a change founded upon mere vagaries, but *tempora mutantur, et nos mutamur in illis.* New needs occur, and a hundred men volunteer for the occasion. When the civil war broke out in 1861, the ingenious mind of the people could not rest easy while muzzle-loading muskets were served out to the soldiers. A few breech-loading rifles were then in use, principally of the Maynard and Sharps patterns, but not one man in ten in the United States had ever seen a breech-loading fire-arm. Even the chamber of the revolver was then loaded from the forward end. No simple mechanical problem has ever received so many solutions as that of the breech-loader. Required, a means of unclosing the rear of a gun-barrel, introducing a cartridge thereat, closing the breech, and firing the charge. The solutions of the problem that have been given have such variations in detail that about one thousand patents have been granted therefor. So of other new needs and opportunities.

**PETROLEUM.**—There was a time when the Seneca Indians gathered from the surface of the water in certain parts of New York and Pennsylvania a bituminous oil of peculiar smell, and with a reputation for great medicinal virtue. This Seneca-oil, rock-oil, or *petroleum*, whose Latinized name has, contrary to the usual fortune in such cases, been adopted, has been known for thousands of years in some parts of the world, the burning springs having had a reputation for sanctity, especially those of Baku, on the banks of the Caspian Sea. It was reserved, however, for the pale-faces to make a world-wide commercial success of this product of the natural distillation of carbon. An allied hydrocarbon, the naphtha of coal-tar, had been the subject of experiment for thirty years before the discovery in this country of petroleum in merchantable quantity for illuminating purposes. The coal-oil lamp was, however, no new thing. Pliny, who died from exposure to the mephitic gases at a great eruption of Vesuvius A.D. 79, describes the collection of a bituminous oil from the surface of a spring at Agrigentum (now Girgenti, the principal sea-port in Sicily for the shipment of sulphur), and its use in lamps and for the cure of the itch-scab on beasts of burden.

In Crawford's *Embassy to Ava*, published in 1826, the petroleum wells are described as supplying lamp-oil for the whole Burman empire.

James Young, of Glasgow, in 1847 refined a mineral oil found in a coal mine in Derbyshire, England, and when that supply was exhausted, commenced the distillation of a bituminous shale. He pursued the business very successfully; a refinery, operating under his patent, was established in New York, and the business gradually spread as the demand increased. This directed attention to the precarious supplies obtained in the waters of Western Pennsylvania, and in 1859 Mr. Drake, of Titusville, amidst the jeers of the neighbors, bored for oil. It is said that he gave out that he was boring for brine, in order that he might not be considered as hopelessly insane. The result surprised the world, created a commerce and various industries, raised towns in Venango and Crawford counties, Pennsylvania, and depressed New Bedford and the whaling interest, superseded Cincinnati lard-oil for burning, and to a large extent sperm for lubricating.

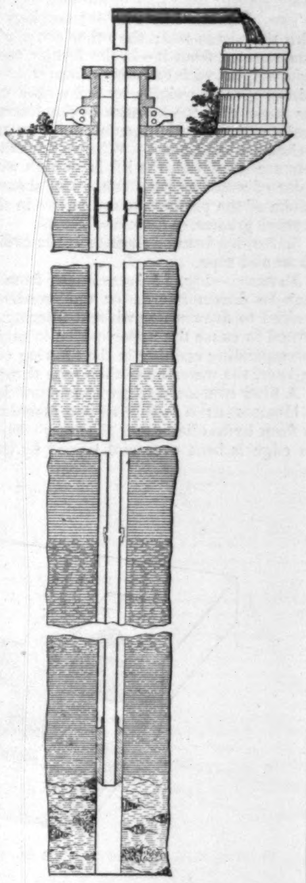

*Fig.* 33.—OIL WELL.

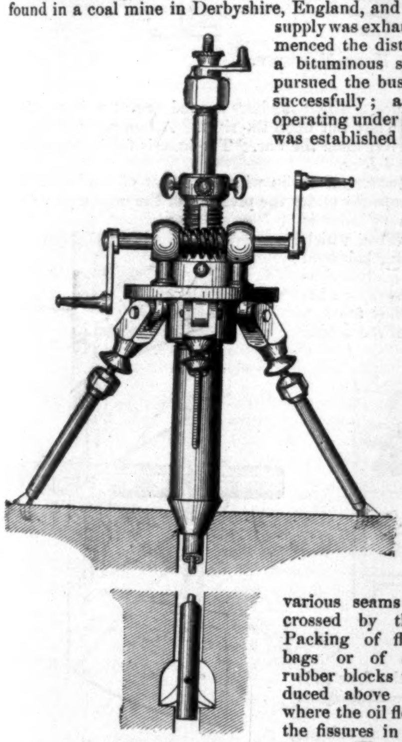

*Fig.* 34.—REAMING BORER.

Out of the necessities of this new business came various plans for boring and tubing the wells, which sometimes reached a depth of 600 to 1000 feet. When the well overflowed, so much the better, but otherwise pumps were inserted. The new conditions of a very small bore and great depth might seem to have sufficiently complicated the problem, but this was by no means the end of the matter. The oil at the bottom, or elsewhere in the shaft, must be isolated from the water which permeates the various seams and rifts crossed by the borer. Packing of flaxseed in bags or of expansible rubber blocks was introduced above the point where the oil flowed from the fissures in the sandstone. The skill with which these matters were conducted is something marvelous. A man having bored a thousand feet into mother earth and tapped a hundred springs, now essays to isolate an oil-yielding portion of the vertical shaft from other portions, and lower a pump into said section; and he does it. When gas, as is not uncommon, exists in large quantities, its pressure, on emergence from the crannies of the rock, is used to drive the oil to the surface, as in Fig. 33. A packer is placed at the end of the casing, so that no space is left to allow the gas to separate from the oil. The gas, by its tendency to expand, carries with it the oil up the flowing tube, the diameter of which is proportioned to the capacity of the well.—*M'Curdy.*

Various forms of boring machines are used in sinking these deep shafts. A tubing is generally driven until the rock is reached, and then the boring commences in earnest. The plan adopted a thousand or two years ago in China in boring for brine is found effective here. The heavy drill is alternately lifted and dropped, the suspension rope being let out from time to time as the drill sinks, or a new section is added to the drill rod. At frequent intervals the drill is withdrawn, and the detritus lifted by a cylindrical shell with a valve at the bottom, and known as a sand pump.

When it becomes necessary to bore the hole evenly to receive its tubing or to enlarge at a certain place, a reamer is employed with expanding cutters, as in Fig. 34.—*Siprell.*

Thousands of these wells have been sunk from time to time, but in all cases they appear to drain but a limited area of the oil-bearing stratum.

A means of increasing or restoring the productiveness of oil wells was invented by Colonel Roberts. It is shown in Fig. 35, and consists in exploding gunpowder or nitro-glycerine at or near the oil-bearing point, so as to increase the size of the fissures, and open new crannies into pockets of oil or bodies of rock not exhausted.

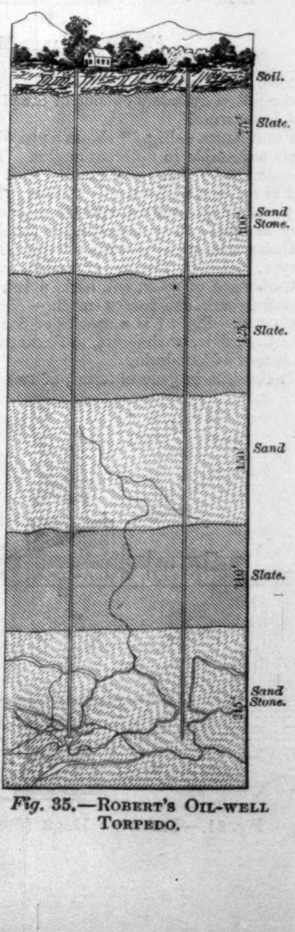

*Fig.* 35.—ROBERT'S OIL-WELL TORPEDO.

**MATCH COMPOSITION.**—Brick-dust, chlorate of potassa, golden sulphuret of antimony, flowers of sulphur, starch, and water.—*Schneider.*

**EXPLOSIVE COMPOUND.**—Chlorate of potash, prussiate of potash or charcoal, and red phosphorus.—*Milbank.*

**CONSTRUCTION OF BUILDINGS.**—Whatever may be the need for pure air within-doors of healthy people in a state of freedom, the case is still more urgent with those who have no remission, but are confined in hospitals, asylums, and penitentiaries. The schools, churches, theatres, courts, and legislative halls of the land are a reproach to an enlightened community, but these are usually occupied for a few hours only of each day.

**JAIL VENTILATION.**—In Fig. 36 two ranges of cells constitute an interior structure, surrounded by a guard-room, which extends throughout the length and height of the building. Outer air is admitted into vaults, where it is heated, thence passes to the guard-room, through each cell in each tier, into a double corridor occupying the space between the ranges of cells, and thence into the upcast shaft or chimney.—*Mullett.*

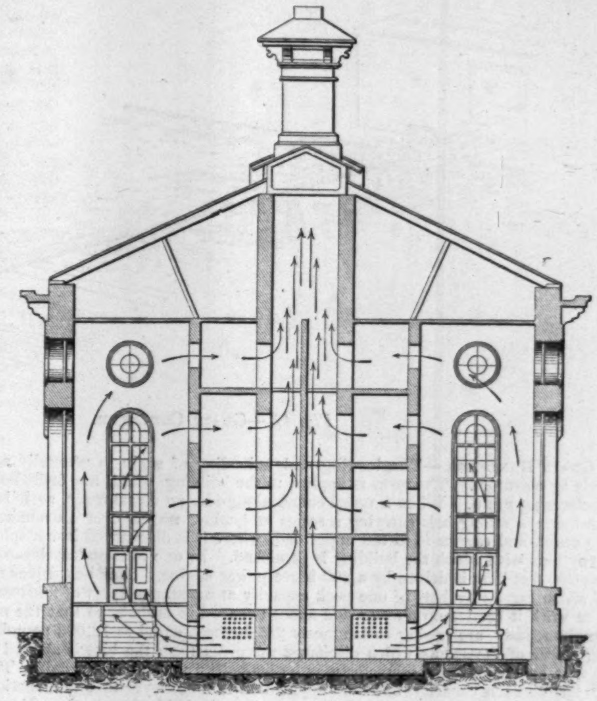

*Fig.* 36.—JAIL VENTILATION.

Fig. 37 is a fire-proof Mansard-roof, with a frame-work of wrought iron, having a series of knees riveted to the ends for the support of the bricks. Wires for securing the slats are passed through the joints of the brick-work, and held by iron pins.—*Conolly.*

A screen or apron of asbestus cloth, employed as a protection of buildings or other property from fire.—*Babson and Mulford.*

**ARTIFICIAL STONE.**—Sand, gravel, and cement, mixed with baryta, glycerine, and lime-water.—*Hall and Salisbury.*

Gravel, sand, hydraulic lime, granular waste iron, and water.—*Bérard.*

Hydraulic cement, lime powder, sugar, silicate of soda, sand, and gravel.—*Colby and Evans.*

**MORTAR. COMPOSITION FOR HARDENING.**—Nitrate of potash or soda, sugar, lime, mortar, and cement. Or, nitrate of potash, sugar, hyposulphite and silicate of soda.—*Colby.*

**CEMENT FOR STOVE LINING.**—Native fire-clay, mixed with burned and powdered fire-brick, and moulded.—*Witherell.*

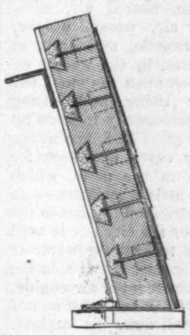

*Fig.* 37.—FIRE-PROOF MANSARD-ROOF.

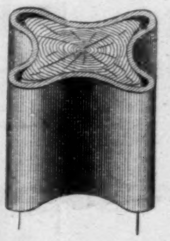

*Fig.* 38.—CORRUGATED IRON COLUMN WITH CORE.

**PAVING.**—Tar, 100; sulphuric acid, 1; linseed-oil, 3; lime to saturation: when used, it is melted and mixed with sand or sawdust.—*Porter.*

**ROOFING.**—Asbestus as a binding material in cements, mortars, and mastics.—*Johns.*

**ROOFING AND PAVING TILE.**—Silica, sulphate of lime, hydraulic lime, oxide of magnesia, sulphate of potassa, alum, borax, sulphuric acid, and carbonic acid.

A hollow corrugated iron column or girder (Fig. 38), having a core which stiffens the pillar and prevents collapse.—*Manes.*

**FIRE-ESCAPE.**—A ladder (Fig. 39) in sections, which are raised to an inclined position by a cogged roller, which engages with an adjustable rack. The sections are then extended telescopically by means of ropes and a winch upon the carriage.—*Davis.*

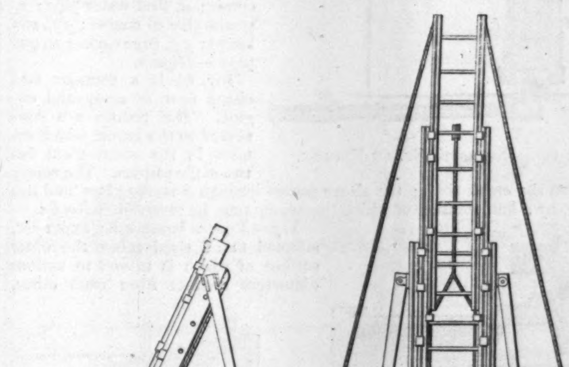

*Fig.* 39.—FIRE-ESCAPE LADDER.

**WIRE ROPE.**—A wire rope made up of wires each of which has an equal taper at all parts of its length, each wire being continuous throughout the whole length of the rope.—*Roebling.*

**CARPET LINING.**—Composed of flattened paper tubes or cases, with fillings of cotton batting laid side by side and connected by binding strips. Pressure rolls, and two endless aprons provided with transverse ribs, serve to press together and carry along the binding tapes, and flattened rolls made of batting inclosed in paper, the tapes being first carried over pasting cylinders. Steam-pipes for drying are arranged between the sets of pressure rolls and on both sides of the lining.—*Mayall.*

**RAILWAY CAR SPRINGS.**—Fig. 40 is a spiral metallic car spring, made from a flat bar of steel, and having coils with broad flat surfaces decreasing in diameter from each end, whereby the coils are prevented from telescoping.—*Hansell.*

Fig. 41 is a coiled spring of half-round bars, solid or grooved, and variously associated; in apposition to form a tube, or placed co-axially in duplicate or triplicate.—*Clooney.*

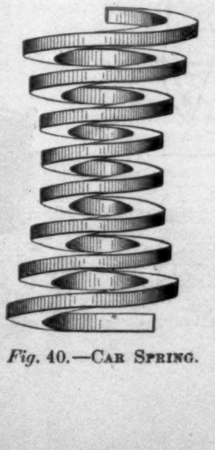

*Fig.* 40.—CAR SPRING.

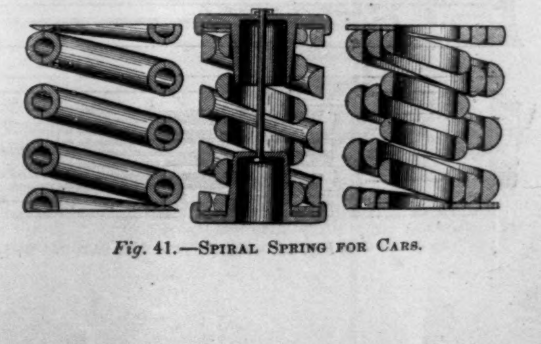

*Fig.* 41.—SPIRAL SPRING FOR CARS.

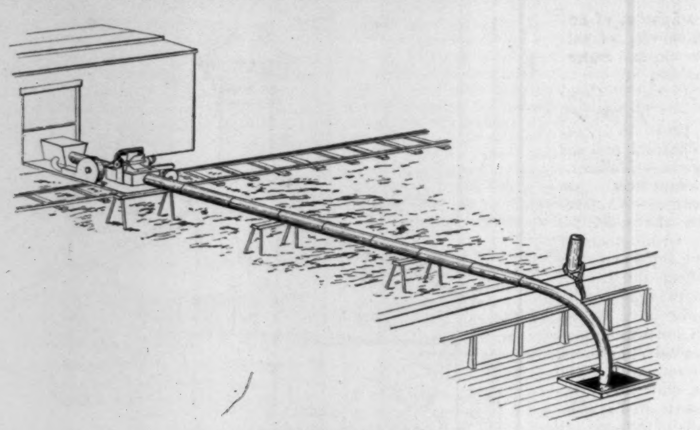

*Fig.* 42.—GRAIN CONVEYER.

GRAIN HANDLING.—The loading and unloading of grain is generally accomplished on a large scale by elevators. The term is applied to the building, which has facilities for lifting, storing, and discharging grain. When a vessel comes alongside, an elevator *leg*, as it is called, is lowered into the hold; a strong belt carrying a series of buckets travels over a drum at the lower end, dips up the grain, and carries it to the upper end, where it is discharged into a spout leading to one of the many bins with which the building is furnished. In one Milwaukee elevator, 280 × 80 feet, a main belt 280 feet long is driven by a 200 horse-power engine. This belt drives nine elevator belts, each of which carries buckets of one peck capacity at a distance apart of fourteen inches. When a belt is at work it carries up on one side about twenty-five bushels, so that the nine belts, when running simultaneously, are raising continuously 225 bushels, equal to 12,000 pounds, of wheat. The loading power of the spouts which discharge the grain from the bins is about 12,000 bushels per hour, so that an Ogdensburg schooner may be loaded in an hour and a half. The grain conveyer, Fig. 42, has no such capacity, but is an application to a conveyer tube of a suction blower and a plenum blast to empty the grain from a railway car into the hold of a vessel.—*Simonds.*

LUBRICANT.—Mineral oil, graphite, flowers of sulphur, and soapstone, with or without the addition of tallow, palm-oil, and rock-salt.—*Mandel.*

STEAM.—Engines of various kinds have been made on a small scale for domestic use, for operating sewing-machines, knitting-machines, watch-makers' lathes, and for various other purposes. Such have been made to run by steam, heated air, compressed air, water, weight, spring, treadle, and even, in some cases, by the weight of the person upon the stool, the operator rising and sitting down occasionally to keep up the power. The preference in many cases has been for water from the main, which drives a little wheel, the waste being carried off by pipe to the sewer; or the city gas is used in lamps to heat the water or air, as the case may be, in the miniature steam or air engine.

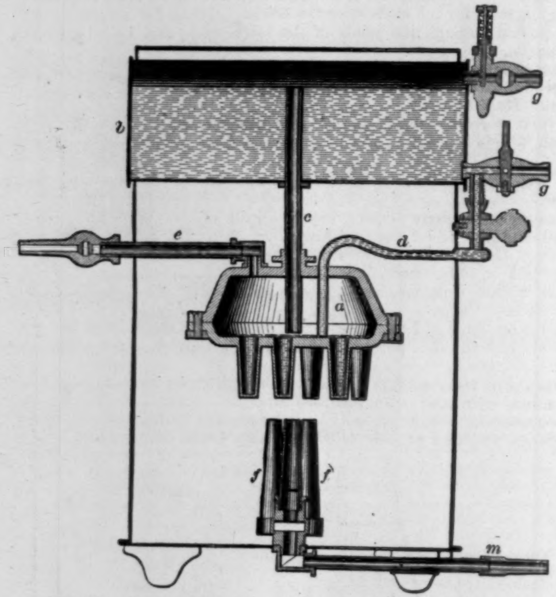

*Fig.* 43.—STEAM-BOILER FOR DOMESTIC STEAM-ENGINE.

Fig. 43 is a boiler for one of these small domestic engines. It is heated by gas-burners beneath the generator, whose bottom has dependent cups to increase the heating surface; *a* is the generator; *b*, the reservoir; *c*, pipe leading to reservoir; *d*, feed-water pipe; *e*, steam-pipe to engine; *f f*, gas lamps; *g g*, gage cocks; *m*, gas pipe.—*Bogart.*

Fig. 44 is a compact and cheap form of compound engine. The pistons are connected to the crank, which rotates in the steam-chest between the pistons. The rotary valve is keyed on to a sleeve on the crank shaft; the sleeve passes through a stuffing box, and has the hand-wheel, *f*, keyed on it, by a half rotation of which the engine may be reversed.—*Nobles.*

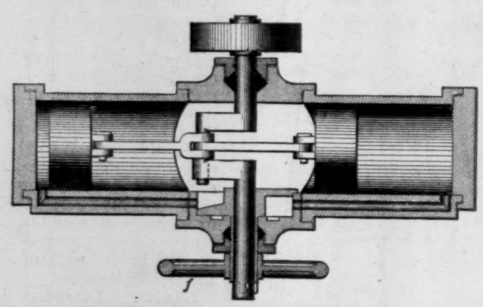

*Fig.* 44.—RECIPROCATING STEAM-ENGINE.

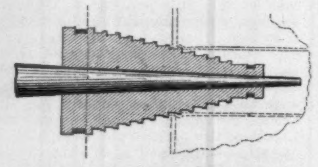

*Fig.* 45.—BOILER-TUBE EXPANDER.

Fig. 45 is a boiler-tube expander, adapted to all sized tubes, the outer surface of which is turned to various diameters distinct from each other, each gradation being provided with a collar for forming the bead inside the head of the boiler. The stepped portion is made in four longitudinal sections; these are expanded by a tapering pin which is driven in axially.—*Sharpneck.*

ANTI-FRICTION METAL.—Zinc, 28; tin, 20; antimony, 10.—*Guile.*

ELEVATOR.—There are three principal forms of elevators for hotels and warehouses.

1. The cage is on top of a piston, which rises from or sinks into a deep vertical cylinder, according as water is pumped into the cylinder or allowed to flow from it. This is the *ascenseur edoux* of the French, and is a very safe arrangement, but requires a cylinder in a well as deep below the lower station of the platform as the distance the platform is required to be elevated.

2. The hydraulic elevator with rope and suspended cage. In this class of elevators the motion of the cage or platform is derived from a moving piston, operating through the instrumentality of a cable whose lower end is secured to some fixed object, and whose other end is rove around two sets of sheaves, of which one set, *b*, is in fixed bearings, and the other set, *g*, in traveling bearings, which, being fastened to the piston-rod, are made capable of being drawn away from the stationary set. The parts being thus arranged and attached, admission of water to the cylinder causes its piston to retract, dragging the traveler with it, so as to haul on the free end of the cable with a speed relatively greater than that of the piston proportional to the number of traveling sheaves employed.

The hydraulic lift (Fig. 46) employs two sets of traveling pulleys—one set, *g*, rigidly connected with the piston-rod; the other set, *g′ g′*, capable of being connected by hooks with the first set or disconnected from it—in the former case for raising light weights with economy of water, in the latter for raising greater weights by full stroke of piston. In the latter case the journals of the detachable set, the cable, and cord abutments co-act to make the detached set stationary. When all the sheaves of both sets are employed, the lift is as high with a half cylinder of water as with one set of sheaves and a full stroke of the piston, but the power in the latter case is much greater.—*Lane and Smith.*

3. A third form of elevator is the ordinary winding drum and rope.

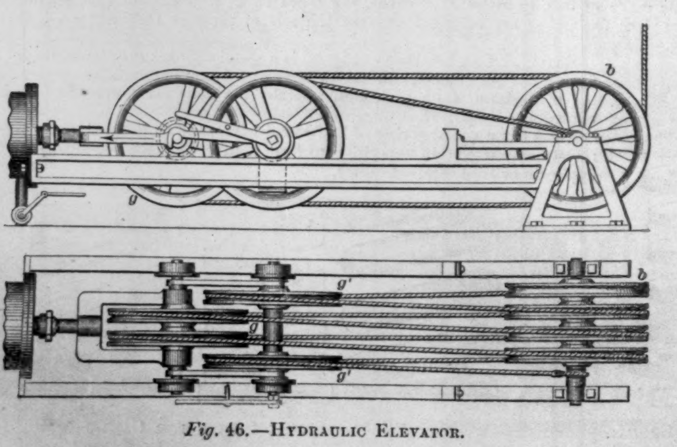

*Fig.* 46.—HYDRAULIC ELEVATOR.

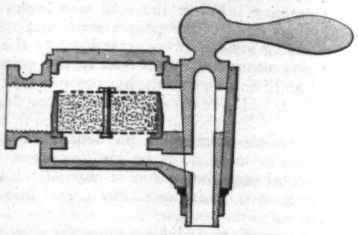

*Fig.* 47.—FILTERING FAUCET.

FAUCET.—Fig. 47 is a faucet from which water may be drawn filtered or unfiltered. When it is desired to draw water without filtering, the spigot is turned to cause the upper orifice to register with the corresponding opening in the filtering chamber. To filter the water the lower orifices are caused to register, the water must then pass through the filtering material.—*Wilson.*

A filter composed of paper-makers' *half-stuff*, contained in a suitable vessel.—*Outerson.*

HOSE-MAKING.—Fig. 48 is a machine to fold, lap, and rivet the lapped edges of continuous strips to form hydraulic hose. The material, in strips of a proper width, is pushed into the folders, *d*, and its edge is bent over and lapped by the recurved portions, *a a′*. The rivets, *m*, are fed along the channel, *h*, and are clinched below the slide-way, *g*, down which the burs are fed, one at a time. A tubular driver is then forced down, impaling the hose and bur upon the rivet. A hammer rod then descends inside the tubular driver and clinches the rivet upon the bur. The hose is fed by the rollers, *b b*, after coming within their grasp.—*Dodge and Rice.*

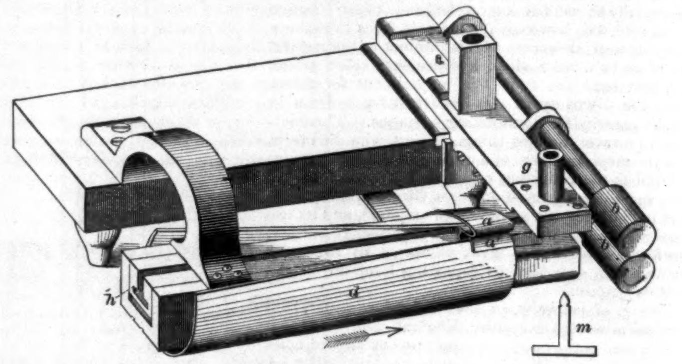

*Fig.* 48.—HYDRAULIC HOSE MACHINE.

WATER-METER.—Fig. 49 is one of that class of water-meters in which the flow of the liquid is measured by pistons moving in cylinders of known capacity under the pressure of the ordinary head, which forces it through the service-pipes. Each cylinder is furnished with a double piston and intermediate valve, which pistons and valves move alternately. The floating balanced valves have annular grooves, which are always in communication with the exit ports. By means of the annular space between the valves and the piston-rods upon which they move, a constant pressure is maintained between the heads of the double pistons. The pressure is admitted alternately to the four ends of the piston cylinders outside of the piston heads.—*Huntington and Hempstead.*

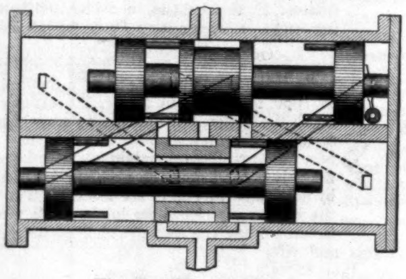

*Fig.* 49.—WATER-METER.

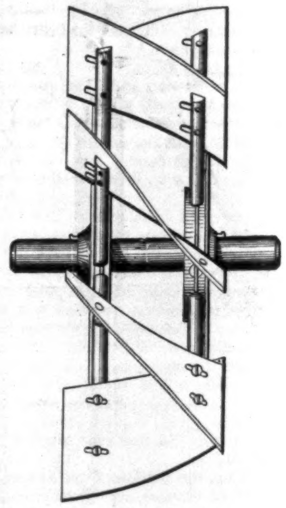

*Fig.* 50.—OBLIQUE PADDLE PROPELLER.

PROPELLER.—Fig. 50 shows a propeller wheel having oblique floats adjustable to different angles. The shaft of the wheel is intended to be above and parallel with the surface of the water and in the line of the boat's motion. Two of such wheels may be placed at the stern, presenting their oblique floats to starboard and port respectively, or the wheels may be rigged on sponsons in the usual position for side paddle-wheels.—*Dowler and Birdseye.*

REMOVING INCRUSTATIONS FROM STEAM-BOILERS.—Caustic soda, chloride of iron, muriate of baryta, molasses, vinegar, glycerine, and water.—*Lavo.*

Carbonate of soda, oak bark, pulverized charcoal, muriate of ammonia, linseed-oil cake, alum, sassafras bark, and potato starch.—*Hurd.*

CAMEL.—Fig. 51 is a species of floating dock or camel designed to lighter ships or other vessels over bars, flats, or shallows, to float stranded vessels, raise sunken ships, rescue vessels disabled and in danger of foundering.

It consists, in general terms, of two half-elliptical caissons shackled together at stem and stern,

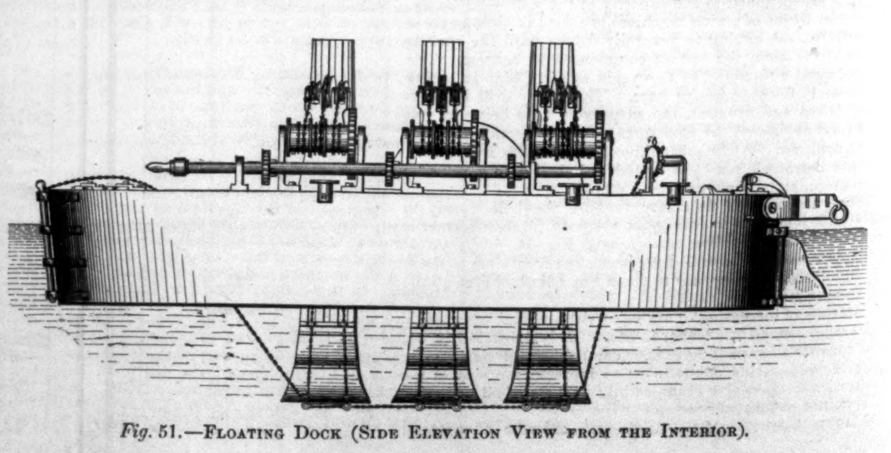

*Fig.* 51.—FLOATING DOCK (SIDE ELEVATION VIEW FROM THE INTERIOR).

and having on their decks heavy windlasses with undergirthing chains, which have been disposed beneath the vessel to be elevated. The combined hollow caissons form an inclosing dock, which is navigated by paddle-wheels and rudder (Fig. 52).

To *lighter* a vessel the dock is opened at its stern, and the side pads, chains, and keel beds lowered sufficiently into the water; the vessel is drawn or admitted into the hollow ellipse or berth of the dock, the dock is then closed and clamped, and the vessel elevated by the hoisting machinery, operated by steam, hydraulic, or other power.—*Marcusy.*

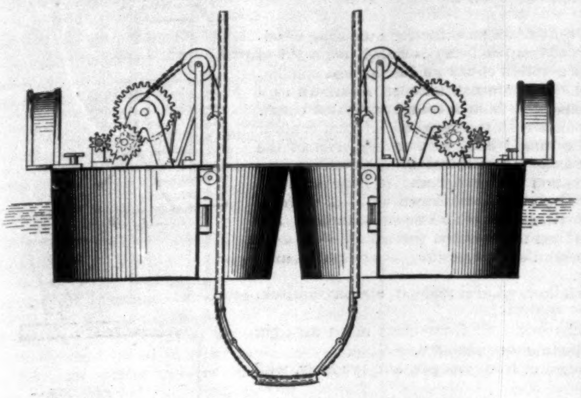

*Fig.* 52.—FLOATING DOCK (TRANSVERSE SECTION).

Fig. 53 is an anchored floating platform, open in the centre, and carrying a telescopic dam or inclosure which adjusts itself to changes of water-level, and incloses drilling apparatus for subaqueous drilling, so that operations can be carried on undisturbed by tides and currents.—*Lewis.*

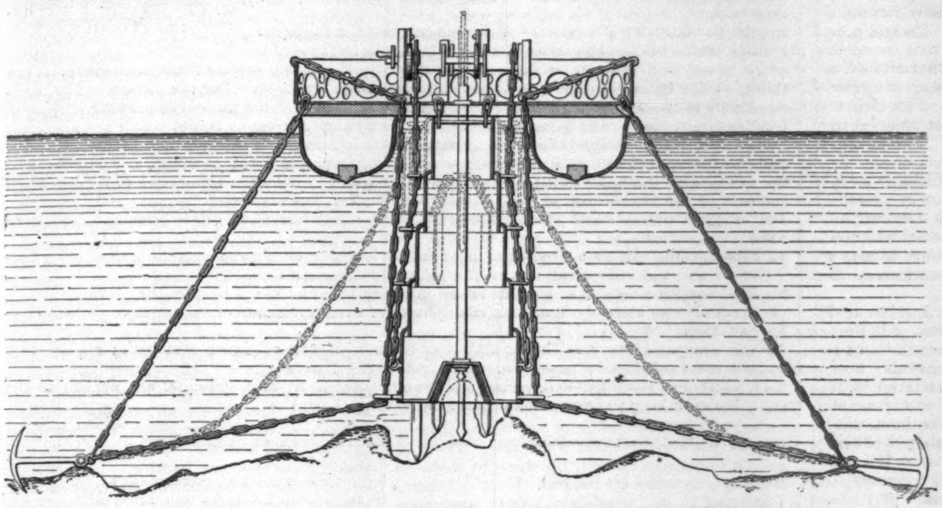

*Fig.* 53.—APPARATUS FOR REMOVING OBSTRUCTIONS UNDER WATER.

WATER-WHEEL.—The turbine is the latest form of water-wheel, being but fifty years old. The other forms, the overshot, breast, undershot, and the *tub* or dash wheel (in which a jet of water falls upon oblique blades), are devices so old that the memory and the recorded history of man run not to the contrary. The water-wheels at Hums-Hamath, and all along the Orontes, are but survivals of a type which for many centuries was used upon the Mesopotamian rivers when the marvelous system of irrigation yet prospered upon the Tigris and the Euphrates. The wheels of Syria are driven by the river itself, paddles being attached to the rim, upon which the stream is turned by means of a low dam, carrying the huge wheel around with its load of ascending buckets. Thomson, in his *The Land and the Book*, says that there is perhaps no machinery in the world by which so much water is raised at so small an expense. With their loads they revolve slowly on their groaning axles, which never taste oil, each singing a different tune—a concert wholly unique and half infernal, which, once heard, will never be forgotten.

The first indication of the turbine was the reaction wheel, known in the text-books of mechanics for a hundred years past as the Barker Mill.

Fourneyron invented the turbine in 1823, and made the first one in 1827.

There are few classes of inventions in which more care has been displayed in the arrangement and proportion of parts and in the tests to ascertain the percentage of valuable effect obtained from the power employed. Fourneyron's turbine discharged outwardly, but the system has great flexibility, and turbine wheels are now made to discharge inwardly, downwardly at different angles, or in several directions; also single or in pairs, at the opposite ends of a shaft, or close together, the shaft being vertical or horizontal.

Fig. 54 is a horizontal turbine, which derives its water from a scroll around it, the course of the water being first inward and then downward and inward, the water exerting a lifting force against the curved surface of the hub, and relieving the pressure on the step, in part.—*Angell.*

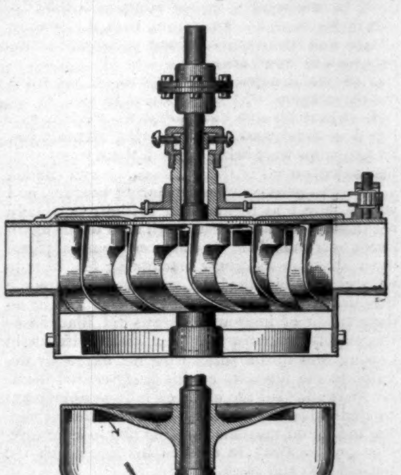

*Fig.* 54.—DOWNWARD AND INWARD DISCHARGE TURBINE.

GLUE.—Stock digested in water until it is partly dissolved, then separate the dissolved gelatine from the undissolved residue by mechanical pressure. The residue is treated in the same way.—*Adamson.*

PAINT.—A solvent for paint skins is made by treating linseed meal or oil-cake and linseed-oil with sulphuric acid in connection with petroleum and boiling; the petroleum is deodorized, and the odor of boiled linseed imparted by adding beans in the boiling.—*Merrymon.*

CYLINDER-GRINDING.—Fig. 55 is a machine for grinding exterior cylindrical surfaces, such as calender and planishing rollers, piston-rods, etc. The grinding wheels are hung in a movable frame so that they will grind evenly, being free to move in all directions in a plane transverse to the cylinder placed between them, their movement depending upon the surface to be ground. The frame swings on a pivot, the bearing of which slides in a vertical slot in the standard. The object is fed longitudinally past the grinding wheels, and the frame is counterpoised by a weight and lever, so as to give each wheel its equal effect upon the object. —*Elliott.*

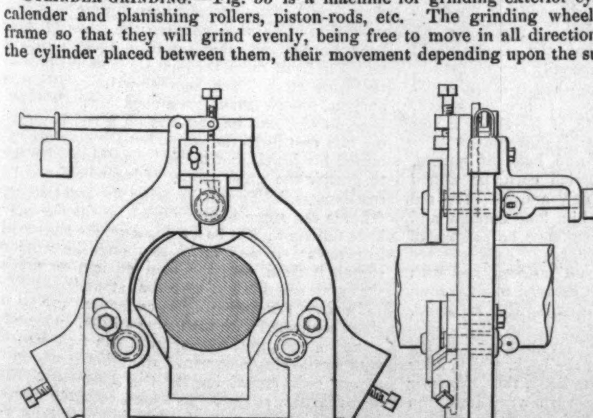

*Fig.* 55.—MACHINE FOR GRINDING CYLINDRICAL SURFACES.

NAIL-MAKING.—One after another the hand processes and methods give way to machine-work. It is now forty years since Henry Burden, of Troy, patented a machine for making horseshoes. After he had overcome the mechanical difficulties of the problem, he had yet to fight the trade. The blacksmiths, teamsters, and farmers wondered and hesitated, questioned the quality of the iron, had serious misgivings as to the shape, suspected the durability of a shoe which had no hammer marks, and, like some of old, "doubted whereunto this would grow."

The late war did much to reconcile differences of judgment and practice. Driving the four or six mule team with single line while riding the near wheeler became the accepted mode of handling a heavy team. The army was supplied with machine-made horseshoes by the thousands of kegs, and the depleted shops were glad to call in the factory shoes in aid of the hands that the war had left at home. The machine Fig. 56 is one for finishing horseshoe nails, the roughing out of these having been done by a previous machine. The nails are grasped between the jaws of spring nippers arranged radially upon the face of an intermittingly revolving table, and are presented successively to the action of a drop-hammer, by which the shank is condensed and hardened, then to suitable shearing dies, whereby each edge and the point are separately sheared, and finally to an anvil block, upon which the point is beveled by a vibrating adjustable roller.—*Mills.*

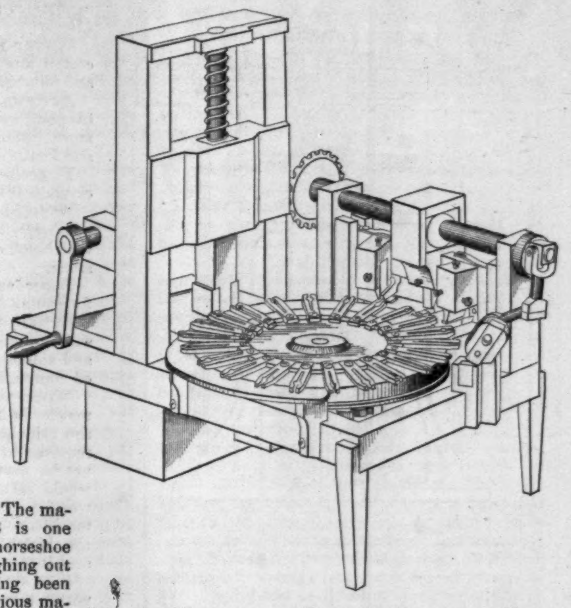

*Fig.* 56.—MACHINE FOR FINISHING HORSESHOE NAILS.

METALLURGY.—It is surprising how small a percentage of so valuable a material as gold will pay for handling a ton of ore; again, how necessary it becomes to use every saving device to gather the seemingly infinitesimal amount of metal. Until nickel fell to about its present price the Norwegians used to work nickel ores which assayed only two per cent. of metal. Many valuable ores require a very careful analysis to determine the presence of any metal at all. An ore yielding twenty dollars to the ton has but a cent's worth in a pound of the ore. It is perhaps gained with great difficulty: drilling, blasting, hoisting from a considerable depth, wages and fuel at an extravagant price to increase the difficulty of the economic problem.

Diodorus Siculus, who wrote when Joseph was a mechanic in Nazareth, after describing the method of obtaining gold from the auriferous quartz of Egypt, concludes: "Nature, indeed, I think, teaches that as gold is obtained with immense labor, so it is kept with difficulty." The former perplexity is the more widely spread annoyance.

Fig. 57 shows one example of a vast variety of machines and apparatus for reducing to more concentrated dimensions the valuable portions of the rock or ore under treatment. In some kinds of mining the portions worth working may be separated by breaking and hand sorting from the gangue and the rock too poor to be worth treating; but when the metal is hidden away in the rock, dispersed throughout it so as to be invisible, nothing remains but to work it all over. It is broken, ground, stamped. The mud, known as *slimes*, is then subjected to processes which depend upon the character of the metal, the facilities for working it, and what not. Mixed in the stamp mill with salt, it may be dusted through the flame of a furnace, when by a double decomposition the sulphide of silver becomes a chloride, and so is amenable to the action of mercury in the amalgamating pan. Many other processes are used.

In the concentrator (Fig. 57) the pulp is fed into the hopper, *j*, and passes through the tube, *k*, to the distributer. This distributer has openings on top to allow of inspection in case the distributing orifices in its under surface become clogged. A pawl, *d*, on the distributer engages with the notched edge of the pan, and as the latter is rapidly oscillated by a crank shaft and connecting rod, the distributer is driven around the pan, and the pulp distributed at its circumference. The sand and lighter portions pass up to the central discharge, while the heavy sulphides and amalgam collect at the periphery in a groove which inclines toward the discharge, where the heavy particles find exit. —*Hendy.*

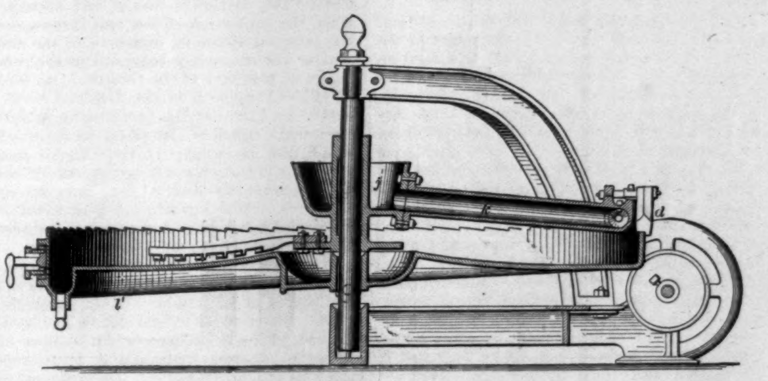

*Fig.* 57.—ORE CONCENTRATOR.

METAL-WORKING.—Since Blanchard invented his spoke and last lathe in 1819 there have been many methods invented for turning irregular forms. The idea of governing the motion of the tool by a pattern was not new in 1819, but the mode devised by Blanchard was new, and is the foundation of the machines by which lasts, spokes, and axe-handles are turned. The machine Fig. 58 is of another class, and not a natural growth from Blanchard's. It is intended for cutting ellipses, ovals, rectangles with rounded corners, or other forms made up of curves, regular or irregular.

The material is placed upon the rotating table, *k*, and clamped by a plate, *l*², which is fastened by a vertical plunger and set screw, *l*. The tool is held in a horizontally sliding rest, *h*, which is attached to a vertically revolving mandrel. Sleeved upon the mandrel, but fastened immovably to the overhanging arm of the standard, is a pattern cam, *i*, which traverses a roller on the arm of a bell-crank lever, which governs the sliding tool-holder, *h*, and varies the distance of the tool from the axis of rotation, according to the shape of the cam groove in the piece *i*. The pattern is made to suit the configuration required, and as many pattern cams are provided as there are different shapes of work required. The pattern cams are

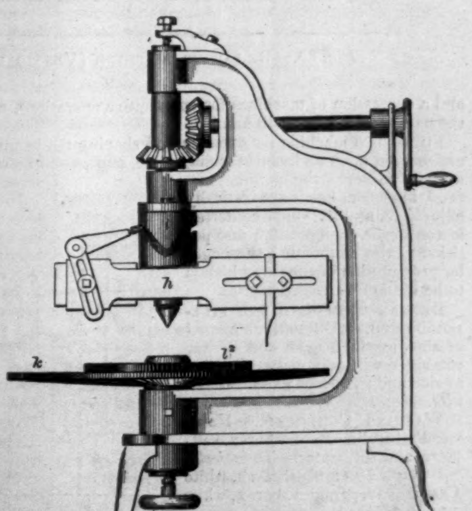

*Fig.* 58.—MACHINE FOR CUTTING REGULAR OR IRREGULAR FORMS.